

# STAR WARS

>>We take an in-depth look at the special effects history of the world's biggest movie franchise >>

## HARRY POTTER

>>A sneak preview of some of the CG for the 5th Instalment, the Order of the Phoenix >>

## STUDIO PORTRAIT LIGHTING

>>We take a look at the relevance of traditional lighting techniques to today's 3D CG renders >>



## INTERVIEWS

>>Liam Kemp, Rodrigue Pralier & Loose Moose Studios.

## TUTORIALS

>>Jungle Mecha by Jeremiah Strong & Smoking Creature by Marco Menco.

## GALLERIES

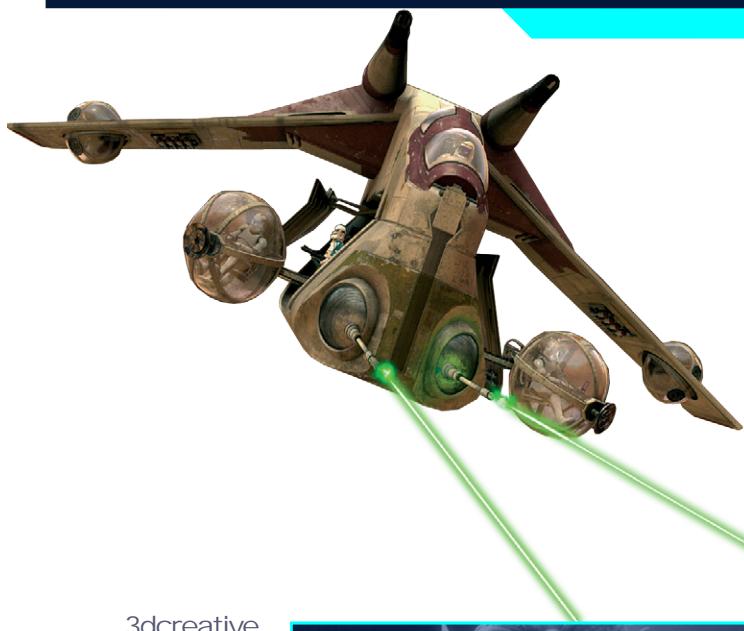
>>Including Sven Rabe, Marek Denko, Marcin Solarz, Tamás Tóthfalussy, Marco Menco & More...

## MAKING OF'S

>>Surfer Dude by Eric Provan, Genitrice by Sébastien Sonet & Bad kitty by Tamás Tóthfalussy.



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articles

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EDITOR  
Ben Barnes

ASSISTANT EDITOR  
Chris Perrins

MARKETING  
Lynette Clee

CONTENT MANAGER  
Warin Pismoke

DESIGNERS  
Bobby Brown  
Alex Price

ARTICLES  
Cine VFX

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Liam Kemp  
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Glenn Holberton

TUTORIALS  
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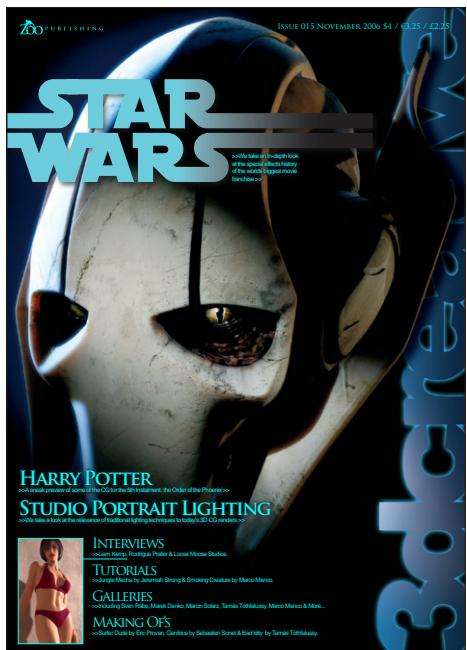
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## Editorial Welcome



### INTERVIEWS

This month we have 3 great interviews. Liam Kemp 'Cyberbabe' creator shows us his passion for the subject, Rodrigue Pralier, now working for EA in Montreal tells us how he is getting on and we talk to traditional animation studio 'Loose Moose' about their ever growing capacity for traditional skills as well as 3D.

### TUTORIALS

We have decided to go back to base roots and we will be featuring a few tutorials on the advantages of having traditional skills for Digital work. This month we focus on Studio portrait lighting. An invaluable skill when it comes to lighting and rendering in 3D packages. Don't say we never do anything for you! We have a Realistic Skin creation Tutorial using ZBrush, 3DSMax and Mental Ray by Sebastien Sonet, some Top Secret z-Brush secrets from Wayne A. Robson, Part 7 of the Swordmaster; Texturing the Hair and Skin, and 3 great 'Making of' project overviews from recent gallery images. So! Read on, be inspired, be enlightened and enjoy 3DCreative Magazine.

### WELCOME

Issue 15 here we are! This months cover shows our absolutely huge article; A history of special effects in the Star Wars series. An exclusive article by Pierfilippo Sienna, and tons of amazing images spanning the entire star wars series and from on set photographs, to concept art and special effects shots this is not to be missed! We also have a sneak preview of the latest effects from the 5th Harry Potter movie; Harry Potter and the Order of the Phoenix.

### ABOUT US

Zoo Publishing is a new company comprising of a small team here in the Midlands, UK. This magazine is our first project which we are hoping, with the support of the community, will build into a great resource and a highly anticipated monthly release. The 'support of the community' is an interesting point, where a 'magazine for 3d artists' is not an original idea, the marketing and distribution of this magazine, as far as we know, is a first. It follows the principle of traditional magazines that are sold on news stands and in many outlets, but being a digital downloadable mag the many established web communities on the net are our outlets and newsstands. 3DCreative is supported by 3dexcellence, 3dkingdom, 3dlinks, 3dm, 3dmonkeys, 3dnuts, 3dpalace, 3dresources, 3dtotal, 3dvalley, 123d, ambiguous arts, cgchannel, cgdirectory, cgfocus, cgunderground, childplaystudios, daz3d, deathfall, digitaltutors, kurv studio, maxrealms, mediaworks, rendezvous3D, spinquad, subdivision, the3dstudio, thebest3d, vocanson & vanishingpoint. We look forward to lasting and successful partnerships with these CG community sites.



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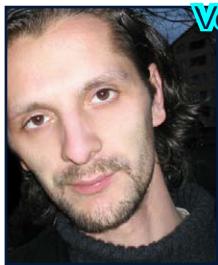
## This months Contributing Artists



### Luciano Iurino

I started back in 1994 with 3D Studio on MS-Dos as modeler/texture artist. In 2001 I co-founded PM Studios & I still work for it as Lead 3D Artist. Recently we have developed the videogame "ETROM – The Astral Essence". I also work as freelancer for different magazines, web-portals, gfx and videogame companies. Recently I left the 3dsmax environment to move on XSI.

[iuri@pmstudios.it](mailto:iuri@pmstudios.it)



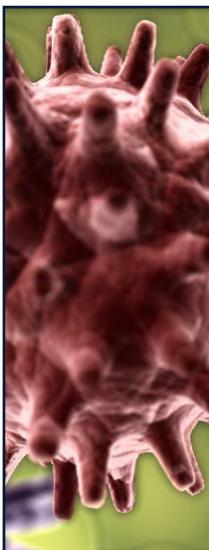
### Vojislav Milanovic

3D modeler, animator, & vfx compositor, Anigraph studio, Self taught all-round 3D guy, started to doodle around in 3D about

8 years ago. In the last 5 years I have done a lot of various things from print and TV ads to gaming & movie graphics. Currently involved in multimedia study & character developing for an animated feature movie. One of my goals is to make my own animated movie

[vojo@teol.net](mailto:vojo@teol.net)

<http://users.teol.net>



### Taylor Kingston

3D artist > Digital Illusions (DICE)

Started out with 3D on Studio Max Self taught through high school, going to Sheridan College for tradition art, and Seneca College for Computer Animation where I switched over to Maya. Hoping to one day break into film, perhaps even getting into the directing side one day.

[taylor.kingston@sympatico.ca](mailto:taylor.kingston@sympatico.ca)  
[puckducker.deviantart.com](http://puckducker.deviantart.com)

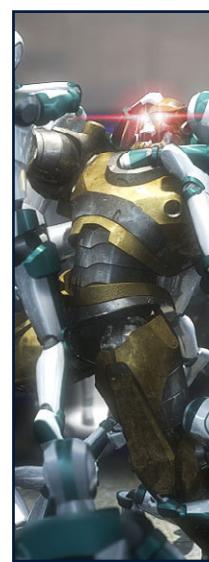
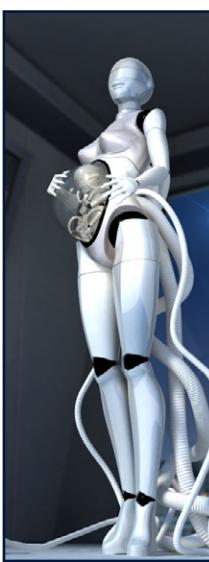


### Niki Bartucci

Freelance 3d modeler, Italy. I started working in the field of Computer Graphics in 2000 as an illustrator & web designer. In

2003 I started using 3d software such as C4D & later 3dSMax. That year I worked on ETROM - The Astral Essence, RPG video-game for PC, developed by PMStudios. Currently I'm a freelancer & specialise in commercials. I especially like RPG & RTS video-games.

[niki@pikoandniki.com](mailto:niki@pikoandniki.com) [www.pikoandniki.com](http://www.pikoandniki.com)



### Giuseppe Guglielmucci

Freelance 3d

modeler / Animator.

I began to use computers with the epoch of the vic20 & Cinema4d was my

1st 3d software. I started working in the field of CG in 1999 in commercial design. In 2003 I worked on ETROM - The Astral Essence, RPG video-game for PC, developed by PMStudios. Currently I'm hoping to work in the video-games industry and develop my own game.

[piko@pikoandniki.com](mailto:piko@pikoandniki.com) [www.pikoandniki.com](http://www.pikoandniki.com)





## Contributing Artists This Month



### Spencer Murphy

I studied Photography at Falmouth College of Arts in Cornwall I Moved to London. I have since contributed to many magazines, including The Independent On Sunday Review. Exhibited in London, Germany & the USA, & will be included in the National Portrait Gallery Photographic Portrait Prize 2006. I was awarded The Association Of Photographers Bursary 2006 for my project "Wastelands". [www.spencermurphy.co.uk](http://www.spencermurphy.co.uk)



### Eric Provan

Modeler / Texture Artist. I began in CG a little over 2 years ago when I started attending Full Sail. I then took a job as a game artist at Kush Games/2ksports. My goal is to eventually get into film, but I'm happily taking in as much wisdom as I can from the talented people at Kush. I'm extremely passionate about 3D Modeling and look forward to spending the rest of my days creating things.

[eric\\_provan@yahoo.com](mailto:eric_provan@yahoo.com) [www.ericprovan.com](http://www.ericprovan.com)



### Sébastien Sonet

I'm a Freelance web & print graphic designer. I started playing with 3D in 2003, just like a hobby, no commercial purpose. I am

hyperactive, and I create images with frenzy, while trying to capture little the human nature



### Tamás Tóthfalussy

I was born in 1985 Budapest, Hungary. Right now I'm a student of the Technical University of Budapest. I spend my free time with cg since 2002. I learned everything by myself with tutorials and the User's Reference. I usually do this just as a hobby, but sometimes I've got occasional jobs.



[tottarie@freemail.hu](mailto:tottarie@freemail.hu)

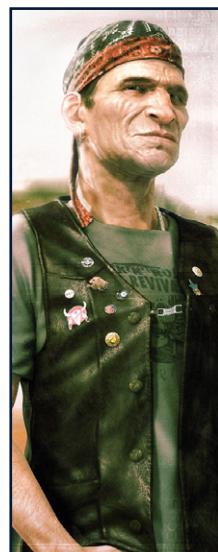
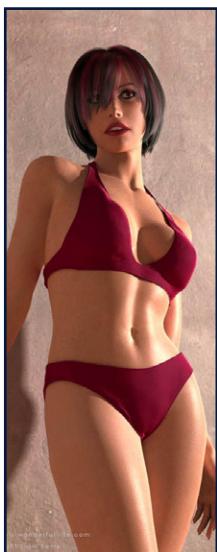


### Liam Kemp

3D artist, Derby, England. I taught myself 3D in 1999 and began my career working for video game companies

Team17 and Core-Design. After the success of my animated short 'This Wonderful Life', in 2004 I decided to leave my job to work full-time on my current self-funded project 'The Normals'.

[liam@this-wonderful-life.com](mailto:liam@this-wonderful-life.com)  
<http://www.this-wonderful-life.com>



### Rodrigue Pralier

Montreal Quebec. Working as an artist for EA Montreal since 2004. I'm currently working as concept artist and senior character modeler on the game Army of Two. I worked as concept artist and 3D modeler on various video games such as SSX PSP, Medal of Honor European Assault, Heroes of might and magic 5, Dead to right 2. [rodriguepralier@hotmail.com](mailto:rodriguepralier@hotmail.com) [www.rodriguepralier.com](http://www.rodriguepralier.com)



# totalTextures

v4: r2

Humans & Creatures

The Original Total Texture collection was created in 2001, utilising the best methods and technology of the time. Since then, techniques and technology have both moved forward, and here at 3DTotal we felt that although the original collection is still widely used and highly regarded among artists and studios of all calibers, it was time for an update...

This enormously improved version of the original texture collection now contains 272 individual Materials, comprising of over 938 individual, hand crafted texture maps. Every Texture now has its own unique colour map, bump map. There is also over 50 new alpha and 100 new specular maps.

What's new?

This new collection consists of 272 materials, comprising of 938 individual maps!! (Colour, Bump, Specular and Alpha maps). We have also included 36 psd files for some of the textures, allowing you to customize some new textures of your own.

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27 Creature Skin (Facial)  
16 www.3d.sk images  
16 Human Eyes  
2 Human Hair  
12 Human Misc (Body)  
24 Human Misc (Facial)  
47 Human Skin (Abnormal)  
2 Human Skin (Old)  
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34 Human Skin (Young)  
15 Human Skin (Reference)



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Existing v4 owners can get the new upgrade for only \$29 usd!

Liam has worked on the immensely impressive 'This Wonderful Life'. He creates stunning models, one being a cyberbabe which was featured in *Maxim*. Currently Liam is working on an equally fantastic animated project called 'The Normals'





## An interview with Liam Kemp



Hi Liam, could you tell us a bit about yourself please?

I am a 33 year old 3D artist presently living in Derby, UK. I have been using 3D software for around 7 years, and up until 2004 I worked for Team17 as an animator and Core Design as a modeller. For the past 2 years I have been working full-time on my next animated project 'The Normals'.

'This Wonderful Life' was a very impressive animation, could you tell us what is was like producing it?

This Wonderful Life is now quite a distant memory, but my recollection of that 2 year experience doesn't bring back too many fond memories, unfortunately. My time on the project was punctuated with problems to solve throughout the production - software crashes, hardware burn-out, pipeline issues, render structuring etc. I was working until 3 - 4 am every night in a tiny room which in summer would reach temperatures of around 37c/98f (thanks to the heat generated by my monitors/PC's). I had 4 noisy PC's running constantly with their side panels removed to stop them overheating as well as a desk fan blowing air into the most troublesome PC. It sounded like being in a generator room, and the day I completed the project I switched all my machines off for the first time in a year - the sudden sound of stillness in that room was actually quite eerie.

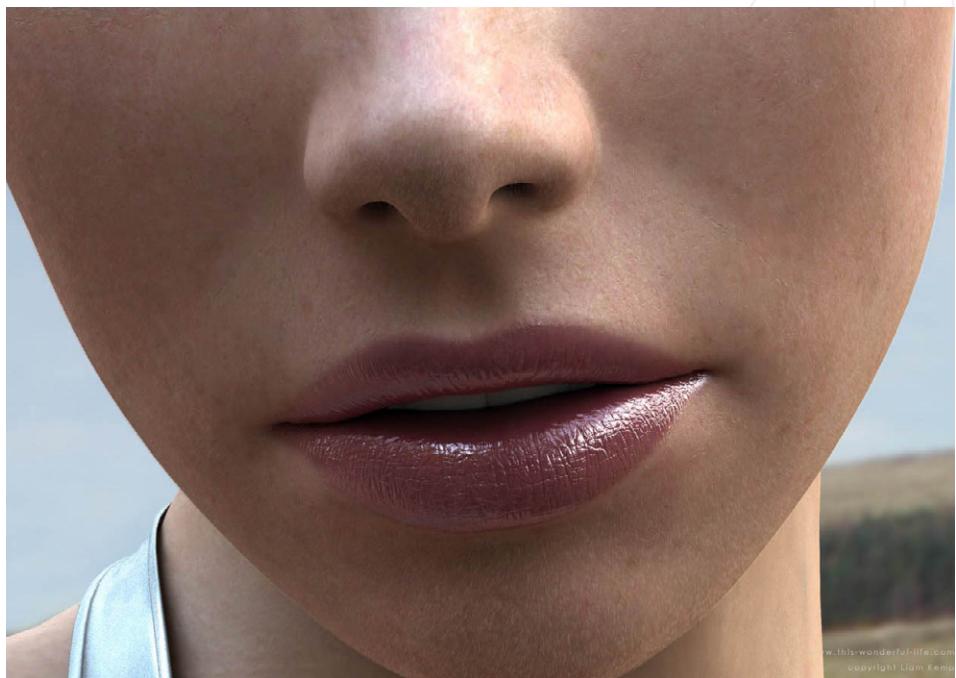
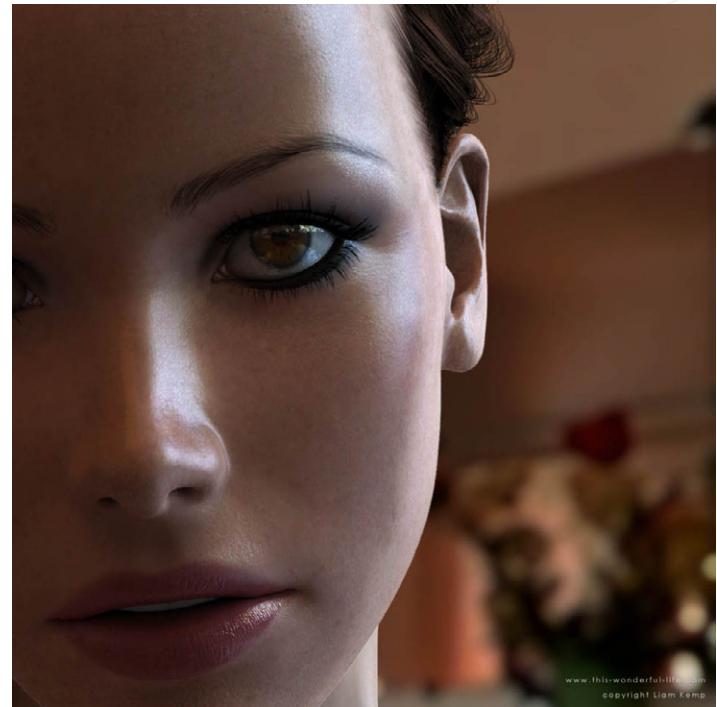
The self-imposed pressure to complete the project was something that was a constant weight upon my shoulders, as it was the first time I'd put substantial amounts of money into making a movie. Because I knew that I wasn't able to quit the project, I did feel somewhat imprisoned by the project I had embarked upon.

So, what was it that made you do such a momentous task?

The project was never meant to take so much out of my life (I had planned for it to take 6 months - the same with 'The Normals', actually), but I have



## Liam Kemp an interview with



a tendency keep pushing at whatever I'm working on until I exceed my own expectations - only then am I sufficiently satisfied enough to let go

Looking at your portfolio you have created a host of very realistic looking women, and I think the one think that is most noticeable about them is their skin. Is this something that you have worked on to perfect?

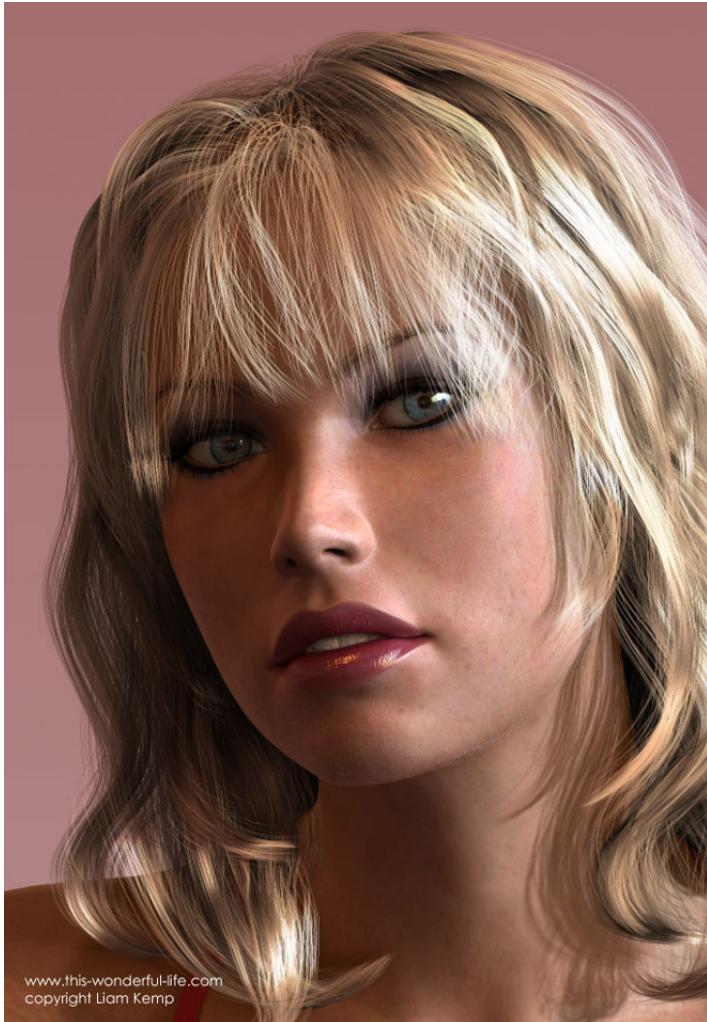
With rendered skin, I think people like to see all the little imperfections as it helps to push away that 'computer-generated' look that we all strive to avoid. With the bump map, for example, I created all the wrinkles and pores by hand and paid particular attention to the different patterns of skin creases across the face, taking care to avoid any repetition.

Have you ever considered creating a training DVD to teach people about the importance of creating perfect looking skin or would you rather keep it to yourself?

I admit to being a secretive person when it comes to techniques, as I do get a small sense of loss when I let people know how I created a particular effect. Though after 'The Normals' is finished, it might be time to loosen up a little...



An interview with Liam Kemp



Who did the whole 'Maxim Cyberbabe' thing come about?

The magazine had come up with the idea to find out what the ideal woman would look like, based upon the results of a survey filled in by its readers. They contacted me to ask if I could create a cyberbabe who's appearance would conform to the results that came in. I got sent a list of the preferred physical attributes that I had to adhere to, such as hair being blonde, wavy and long; eyes to be blue and almond-shaped; lips full and wide etc. I then made all the necessary adjustments to my existing Wonderful Life girl in order to create the new Maxim Cyberbabe.



## Liam Kemp *an interview with*



What sort of response did you get back from friends, as well as the readers of Maxim for creating her?

All the responses I've had from the Maxim cyberbabe were positive and kind, though the most interesting comments are always the ones from weblog/forum websites where I find images of mine have been posted by people (they'll post with a link to my website - that's how I know where I've been featured). The responding comments are always truthful (because they are not addressed to me personally, but to the other forum members), and can be quite brutal - which I actually like :) Recently one of my images appeared on a hair-style/cosmetics forum, and some of the responses from the other members were pretty caustic! It was like my creation had been fed to a pack of lions.



An interview with Liam Kemp



Could you give a little bit of information about your current project 'The Normals'?

The Normals is my next animated project that I've been working on for the past 2 years. It will feature lip-sync (my first attempt at this), and will be a comedy - to those who are able to see it that way. I have so far created my own muscle/facial system which has taken me 8 months to research and build, and am currently in the process of producing a test animation piece to show off the results of this. I have finished 2 characters and have another couple to go before I start the animation proper. The movie is scheduled for completion in spring 2007 where it will do the festival circuit as well as being pitched to TV companies as a pilot for a comedy sketch show.



**Who and what have been your major sources of inspiration over the years?**

When I used to illustrate with paint and brushes as a student, it was the S.F artist Jim Burns who played a major part in my choice of medium, subject matter and composition. I loved the way that his paintings featured people either in the middle of doing something or simply just staring right back at you. His work had shaped the way I approached image making for many

years. When I gave up illustrating to move into 3D, I felt quite alone as there wasn't quite the history of talent that traditional art had offered, and I had no connection to the outside world of 3D whatsoever. This, I think was advantageous as I was able to produce work that bore no resemblance to other artists styles, and forced me to draw inspiration from the life around me.

**How did you relax after creating something as big as 'This Wonderful Life'**  
I hadn't slept for 2 and a half days leading up to the completion of This Wonderful Life, and so just a couple of hours after I finally switched off my PC's I fell asleep in a chair with a cup of tea still in my hand. That was the last relaxing moment I had before having to get ready to move house in time to start my new job at Core Design many miles away. It then took a year and



An interview with Liam Kemp



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a half for me to replenish myself in order to start work on my next project, *The Normals*.

What do you think you will be doing 10 years from now?

I have a habit of exhausting my interest in any creative genre after a period of a few years, and if I'm unable to stretch myself any further I tend to move onto something else. I've been working in 3D for several years now, and feel that with *The Normals* I'll reach a kind of plateau of achievement that I will never surpass. It's the first time I've felt like this about working in 3D, and I know that I'll never make a bigger personal leap than what I've done with *The Normals*. In 10 years time I've a feeling that I'll discover a new creative interest I've not yet realised, and will be learning the process in much the same way that 7 years ago I was just discovering what 3D graphics were all about.

Well it has been a pleasure talking with you and I hope everything goes well with '*The Normals*' and please keep us posted. One last thing before you go, what advice would you give anyone that is thinking of following in your footsteps?

Thank you for the well wishes, and yes, I'll keep you informed of my progress with '*The Normals*'. As for advice, I would say that if you really are passionate about making a movie, then you must just do it. There is nothing worse than living with regrets about not taking your chances when you had them, and if you feel you don't have sufficient spare time - if you care about CG art enough you will make the time. Lastly, get it into your mind that once you start a project, there is no going back - you no longer have the option to quit



### LIAM KEMP

For more work by this artist please visit

[www.this-wonderful-life.com](http://www.this-wonderful-life.com)

Or contact them at

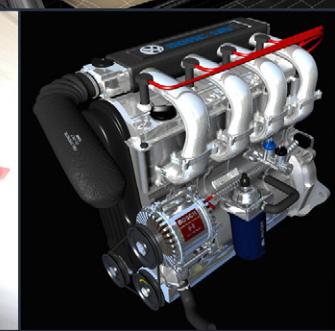
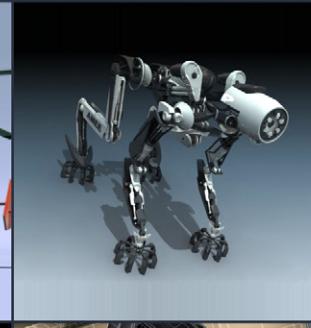
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Interviewed By : Chris



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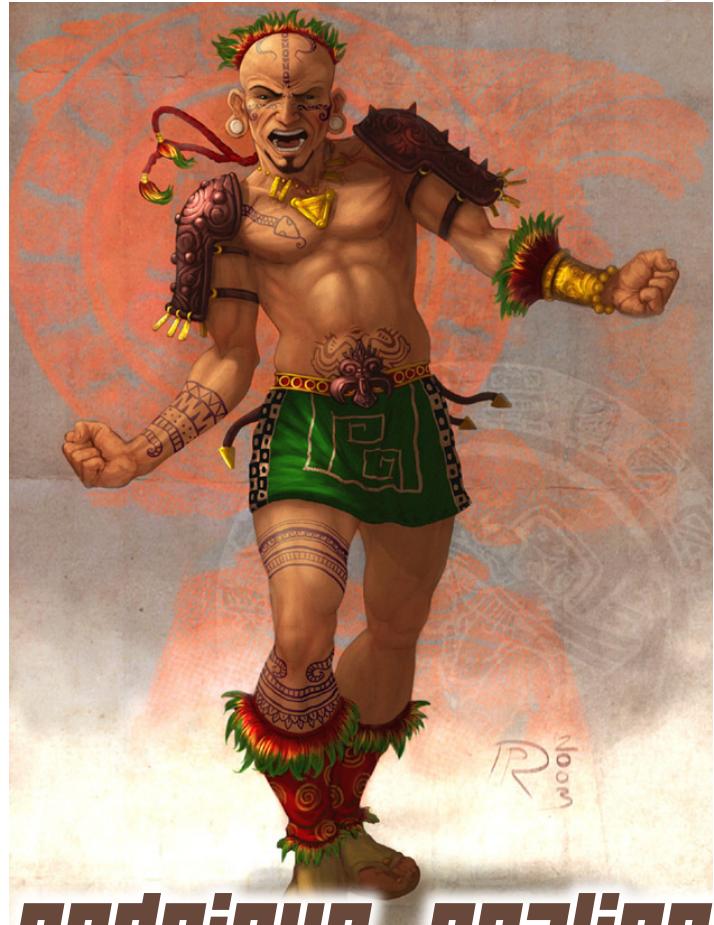
3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online



# Rodrigue Béalieu



Rodrigue has been creating concepts for video games for many years. He was soon picked up by EA in Montreal who now employ him to work on some of their biggest titles. Rodrigue spoke to us about his art and what the future may hold for him..."



# Rodrique Pralier

Hi Rodrique, could you tell us a bit about you and your background?

Well, I'm 27 & I was born in the north of France. When I was 6 years old my parents moved to French Guyana. When I turned 18, I moved back to the East of France for my studies. Since 2004 I've been living in Montreal, Québec. I'm currently working for EA Montreal doing next-gen characters on "Army Of Two".

Can you tell us how you started out in the games business?

After my art diploma, obtained in an art school in Lyon, I wanted to find a job where I could do some character concept and learn new things. At that moment there were many video game companies in Lyon (France) so I started doing a lot of small jobs for a few of them. I did tons of characters concepts and some background research on

various demos and prototypes (for games that never came out). Then Infogramme crashed, and a lot of these companies disappeared. Almost 60% of the companies in Lyon were on the market because of Infogramme, so suddenly a lot of experienced people were looking for jobs. It was a harsh period for everyone. I had to move on and I did some illustrations for various magazines and I started to work on a comic book project. Then I heard by one of my friends who was working for Widescreen Games Studio that they were looking for people. I was hired and started working for them as concept artist. They taught me how to use Maya to create low poly 3D characters for Playstation 2 games, and since I was working quite fast I was asked to try creating backgrounds as well. I liked it and I did it for a few years on various games and prototypes. In 2004, I stumbled on a website mentioning that

EA Montreal was hiring and doing interviews in Paris and in Lyon. I became very enthusiastic but at the same time scared that they wouldn't hire me because of my very poor level in English at the time. I decided to give it a try anyway and surprisingly I was invited to join EA's team. I've been working since August 2004 in Montréal for EA.

How did you find the transition of moving to a huge and renowned games company such as EA?

It's was really challenging. I met a lot of talented people from all over the world, with a lot of experience in the video game industry or in the movie industry. They are used to seeing very good stuff and I had to give my best every day. Because of that I improved a lot, and I'm still improving every week. When I arrived I was



An interview with **Rodrique Pralier**

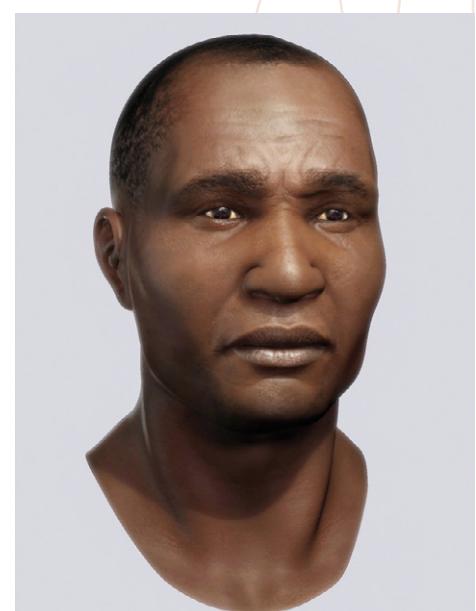




## Rodrique Pralier an interview with

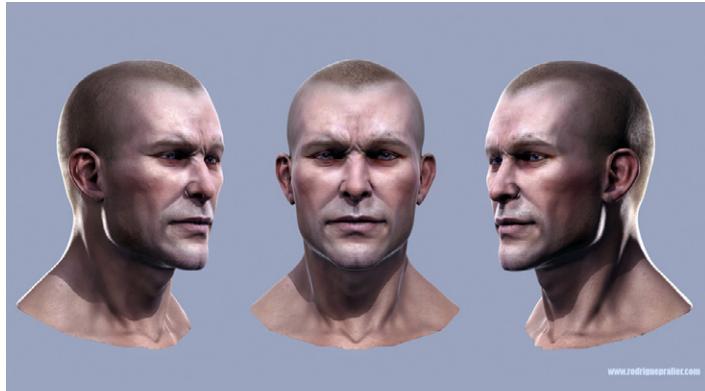


expecting people to be distant with me because of my low experience (and because of my poor English ;)) And, I was afraid to feel like I was in a big factory, but it was the inverse. They gave us all the tools we need to deliver the best quality we could. They know that unhappy people will not deliver good work, so they try to do their best to make us feel happy about what we are doing. The Studio itself is a really nice place to work. I





An interview with **Rodrique Pralier**



wasn't expecting things to happen so well! With the new project 'Army of Two', everyone in the team is able to bring ideas, concepts etc. And it's really cool to deal with talented and open minded people. At the end, what was difficult for me was to leave all my friends and my family in France and to survive my first winter in Montreal (it's mad). I don't know if it would be the same if I had moved to another EA studio but I never regret my move to Montreal and two years after it's still fun to work there.

Apart from the obvious graphical differences, how would you compare working on next-gen games to working on games for the old systems?

For me it's completely different. When I was doing 3d backgrounds for Playstation 2 games, I was in charge of everything; modeling, texturing, lighting, collision mesh and even sometimes some particle FX. The good thing about it is that I was able to do exactly what I had in mind and had to learn all the different steps of the creation process.

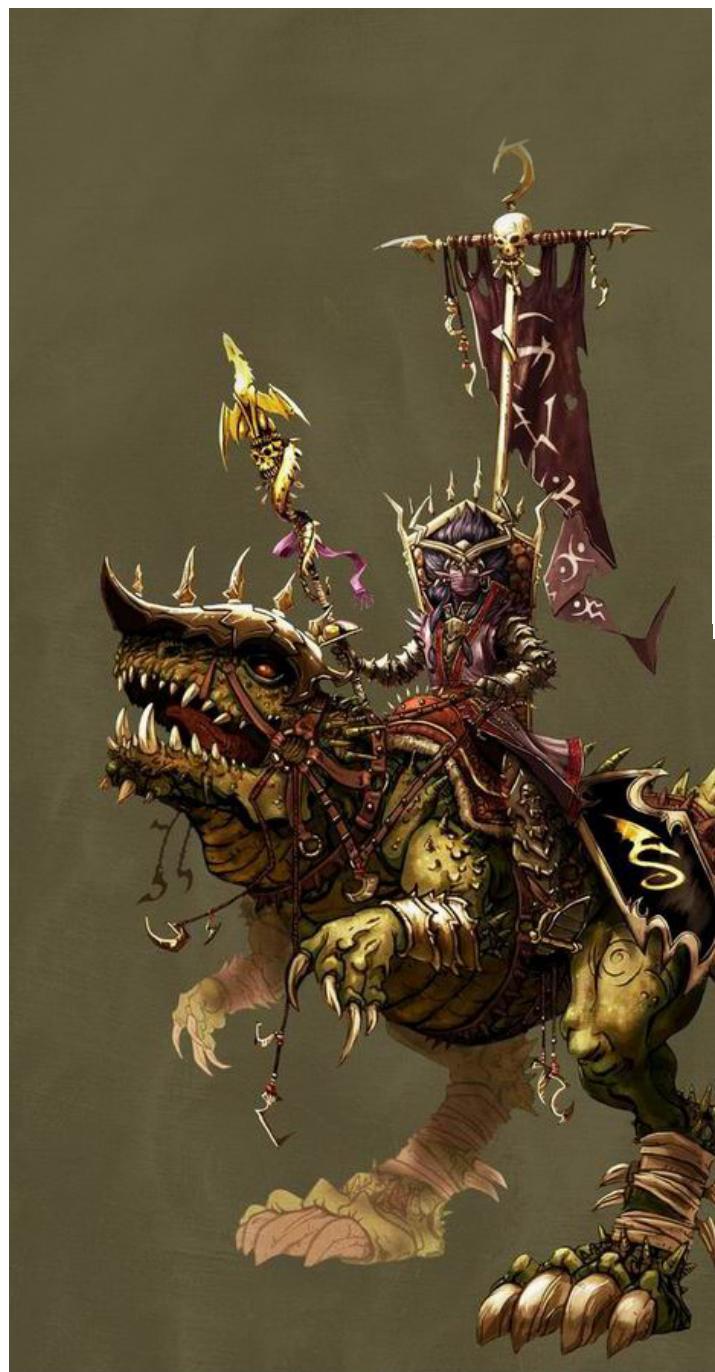
Today the size, the detailing and the complex technology create the need for specialized people in each discipline. What is cool at EA Montreal is that we are still able to do various tasks so we don't end up feeling stuck in one discipline. I very much enjoy the character part because I can do concept art, high-res modeling and texturing, low-res modeling/normal-map and texturing, some rendering and some shaders. It's fun! The really big changes are with the HD stuff, the freedom given to the player in game and the number of programs we have to know. In the old games the



## Rodrique Pralier an interview with



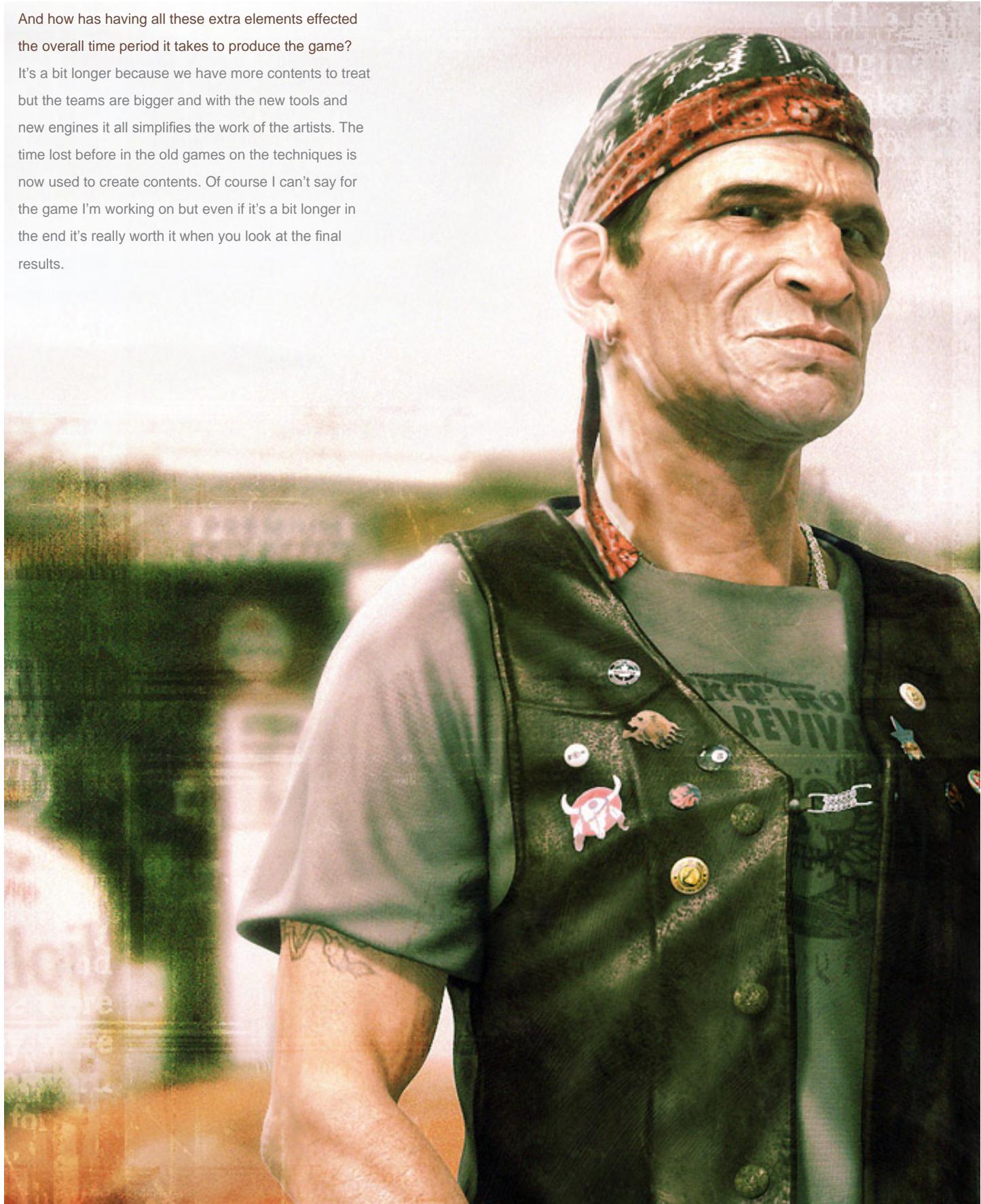
player had a path to follow so we only modelled what he could see from this path using tons of tricks. Now, since the players can play the games the way they want and move the camera to look anywhere they wish, we have to model almost everything in the game. Because of the new HD technology, we can't just "correct the textures" like we did on Playstation 2. We now have to put a lot of details in the diffuse, the normal map, the secular map, the shaders with much precision. Regarding the software, before, if you knew 3dsmax (or Maya) and Photoshop it was enough. Now, to be efficient you have to know how to use 3dsmax, Photoshop, Zbrush, unfold 3D, the new next-gen engine and all the companies internal software.





An interview with **Rodrique Pralier**

And how has having all these extra elements effected the overall time period it takes to produce the game? It's a bit longer because we have more contents to treat but the teams are bigger and with the new tools and new engines it all simplifies the work of the artists. The time lost before in the old games on the techniques is now used to create contents. Of course I can't say for the game I'm working on but even if it's a bit longer in the end it's really worth it when you look at the final results.





You have worked on nearly every aspect of the games creation process, but which have you found to be the most demanding area and why?

I think they are all demanding but if I had to choose one I would say the characters. Perhaps because it's what I do. It's the first thing people look at in a video game and everyone has it's own view of it. It's really hard, especially for the main characters, to do something that will suit everyone. Even if the concept art is approved it's only once it's done in 3D that you can see what doesn't work or doesn't fit. You then have to improve or completely change them to make the characters look better. Sometimes the engine improves so much that you have to entirley redo the characters and make them useable for the new tools or use bigger textures and a higher poly count.

Have you ever been unhappy with a character that you have created that has made it into the final game?

I have been working on backgrounds for 3 years, and the few old-gen characters I made were done for old dead demos. Army of Two is a premiere for me. I'll be able to tell you after the game release but for now I'm very happy.

Upon creating characters for next-gen games, do you employ any of the techniques learnt to your personal projects and if so which ones have you found the most beneficial?

Having started in 2D is a big help for me. It permits me to have a larger view of what I'm doing and at the same time helps me from time to time



[www.rodriguepralier.com](http://www.rodriguepralier.com)



## An interview with **Rodrigue Pralier**



finding an artistic solution to a problem instead of a technical one. I try to continue doing some 2D work at home so that way I can discover new tricks or effects that I can use after in my personal 3D renders or at work. The opposite is also true since I use a lot of things learned at work in my personal projects for example I learned Zbrush at work and now I use it all the time at home. EA Montreal is a wonderful place to work for this since I learn a lot from my co-

workers. We share many of our discoveries and always try to do our best on the projects.

How has the use of Zbrush effected the overall creation of your characters?

Since I have discovered this software I can't stop being impressed by all the possibilities it offers. The high level of details that we can have now is amazing and the bigger textures and the normal map allow us to bring all these details in game.

Almost every two weeks the overall skill of the artists rises up. It's amazing! I can't wait to see what people will be able to do with ZBrush next year.

What has been your main source of inspiration over the years?

Well the 3D and 2D communities on Internet are for sure an incredible source of inspiration. I also try to get inspired by looking at traditional art and sculptures, movies, comics books and historical events. Even when I stumble upon a movie or a type of art that isn't part of my taste I still take a look at it because it could always give me good ideas for future compositions, colors etc...

Aside from work, what do you enjoy doing when you are away from your monitor?

That doesn't happen a lot since I'm always working. Seriously, what I enjoy the most is reading comic books (manga, comics, French comic book), watching movies, barbecuing with my friends but overall spending time with my girlfriend (she calls that "quality time").

Well it has been really nice talking with you and I wish you all the best. One more question before we finish. What advice would you give to artists that would like to get into the games business?

Thank you too. My advice would be to be really motivated, always look for improvement, be aware of what is happening in the other industries (games, illustrations, comics etc..) And to not be afraid of redoing the same thing many times.

### **RODRIGUE PRALIER**

For more work by this artist please visit

[www.rodriguepralier.com](http://www.rodriguepralier.com)

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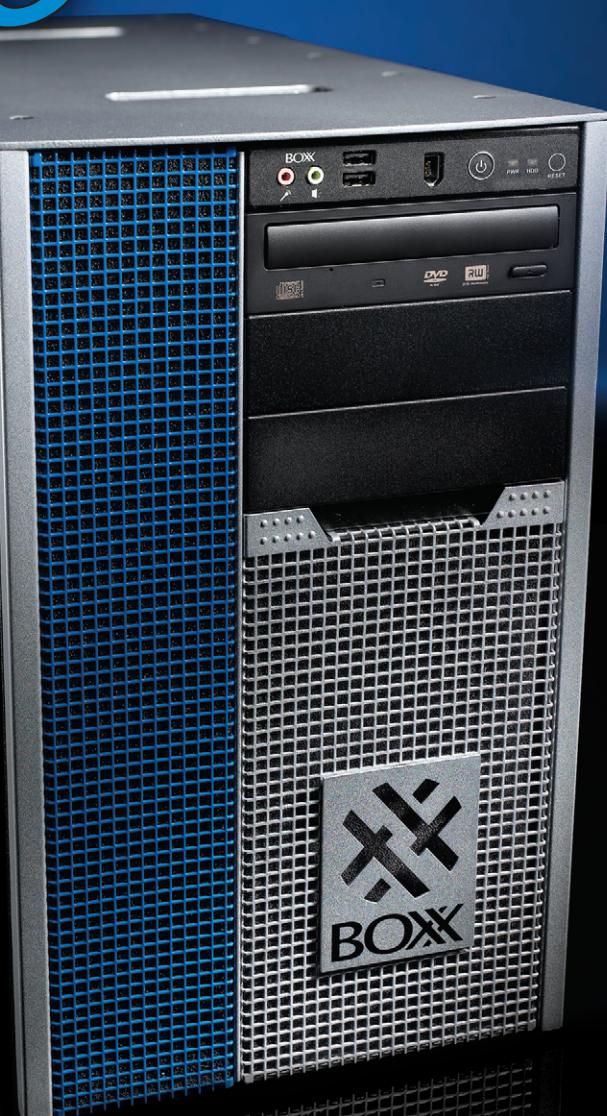
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Loose Moose studios are a company that use traditional methods of animating for most of their commercials, even today they still use old methods of animating on their latest projects.

Loose Moose



## Loose Moose An interview with

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Hi, Thanks for talking to us today. We wanted to feature the studio as you have a very firm base in traditional animation. How did the studio start?

Ken Lidster was directing for Bare Boards, the company that I owned with animation director Barry Purves. Barry wanted to work on longer projects and his own short films. He was enticed away by Warner Bros. to work on the Tim Burton movie "Mars Attacks!!". Ken and I would have liked to be asked to work on Mars Attacks!!, Too, but for what ever reason it did not happen. Anyway, people still wanted to work with Ken and myself and as Barry had removed himself from the scene, Ken and I started a new company - Loose Moose.



**You have had a lot of commercial work, most of which I'm sure our readers will have seen. What is the attraction of commercial work for the studio?**

The great thing about commercials is the variety... we are filming at the moment with characters that were created in the late 1960's and the style is very naive, which makes it hard for Ken as he is tied to a 'look' that is well known in the UK and popular.

But, the next project could be very fast paced and with a completely different feel in terms of design and pace. Also, there is a steady throughput of clients and agency creatives and you get to meet and work with some incredibly nice and talented individuals.

**As far as CG goes, it seems to be mostly compositing. Do you do things differently now CG is so accessible?**

More and more we find ourselves shooting 'elements' that are all assembled during the end compositing process. We use CG integrally combined with the stop-motion and physical sets to give a look to projects that I hope sets them apart from pure CG only production houses.

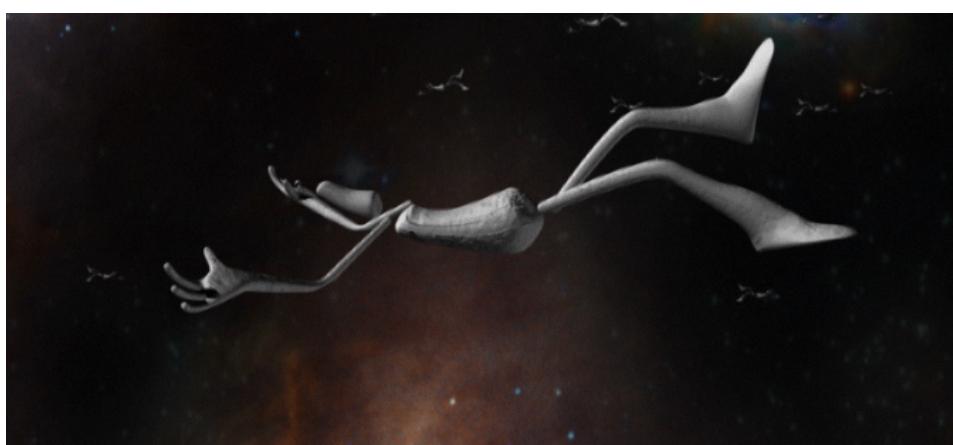
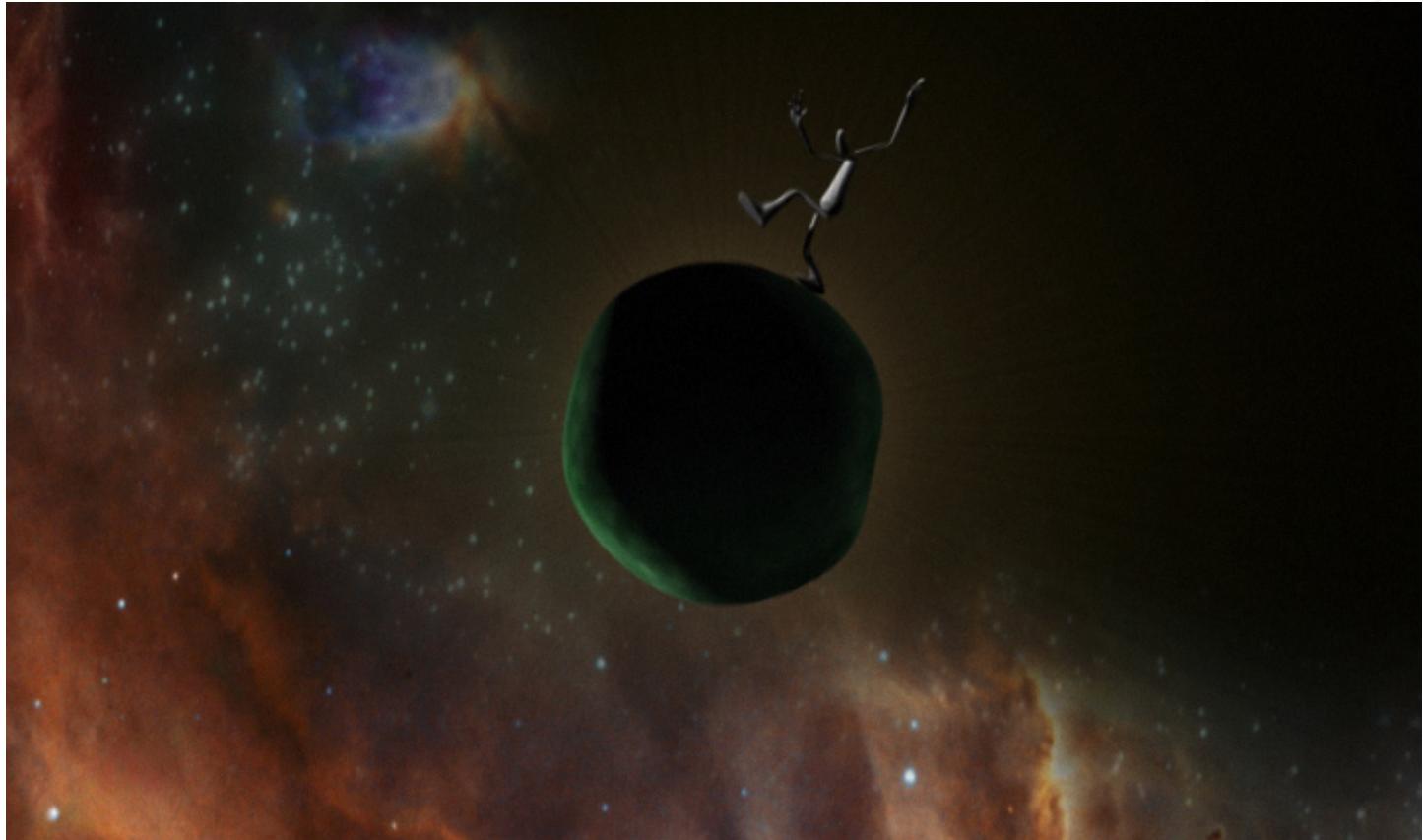
**Why is the traditional animation preferred over the CG?**

I think that there is an almost indefinable reality to stop-motion that is perhaps grasped on a subliminal and sub-conscious

level by viewers. When you put puppets down in a real set they have aberrations and the animation can be slightly imperfect, but with more character - when people view that they believe it and feel comfortable - they get a different experience to that of pure CG.... I'm sure there are people doing CG who can capture this 'believability' effect, but unless all the rendering a lighting is 'just so' - the effect might be spoiled.

**'Fingathing' was a success as a CG venture, why the change of style?**

Fingathing was a great challenge, it had to be done in a way that fitted with the band's own 'look' and it was tailored to a budget.



What was the reaction internally in the studio to the mostly CG based music video?

Once we take on a project, even if the budget is small, then the resources of the whole place and the efforts of all the team go in to that project... 110%!

You have created shots for the League of Gentlemen 'Apocalypse' Movie, what was that like?

I used to work with Steve Bendellack, the League of Gentlemen's director at Spitting Image - he also knew Ken Lidster, and we were very happy when they asked us to work on the feature. It was a joy from start to finish and Ken was able to suggest several shots which really worked and made the audience laugh.

Some parts have 'Harryhausen' written all over them! The style really works with the



dark humour, how exited was everyone to work on such a project?

It was fantastic, we had two units working side by side in a studio in Notting Hill Gate, London during the winter, it got pretty cold, and the puppets that were made for us by Mackinnon and Saunders were truly fabulous.

I was thinking about trying to produce a documentary about the history of stop-motion, and had written to a few well-known animators to try and get their involvement. We had just started the League's feature shoot and one day in the office the phone rang and when the receptionist shouted out 'Ray Harryhausen on the phone for you, Glenn', - well you could have heard a pin drop. He was interested in what we were doing, but when I said "We are doing it the old fashioned way, with stop-motion



## Loose Moose An interview with



puppets" - Ray retorted " It's not the old-fashioned way, it's the RIGHT way".

**What sort of changes were made in the way the brief was carried out, compared to the commercial work?**

There was just more interaction with the movie director and the film's editors. There was less pressure to sell and product and more encouragement to have fun.... It was a great experience.

**What has been the 'biggest' or most exciting project to have worked on so far?**

They are all great, but in addition to the L of G 'Apocalypse', probably the short films like 'Interrogating Ernie' and 'Thunder Pig', plus some of the more recent TV campaign like Chips Ahoy! And Apple Jacks.

**What's in store for the future at Loose Moose?**

We have some exciting new commercials in planning, and we are working on a fully CG short film, which is written by Emma Burch and Peter Williamson, who work at Loose Moose.

**Got to ask one more question...why 'Loose Moose'?!?**

Well, there we were with agencies beating a path to our door, Ken and I kept on trying to think up names that were acceptable to both of us. We each drew up a list of twenty ideas, and still didn't find one that worked, then a girl who was working on a temporary basis for a week said, 'I kind of like Loose Moose', which was a name that we had talked about but had discounted... and we both said, "Yep, that its...." Plus Ken comes from Canada!!



## LOOSE MOOSE STUDIOS

For more work by this artists please visit

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Or contact them at

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by Pierfilippo Siena

We take an in-depth look at the evolution

of the Special Effects from all 6 Star Wars

episodes - from the days of physical models

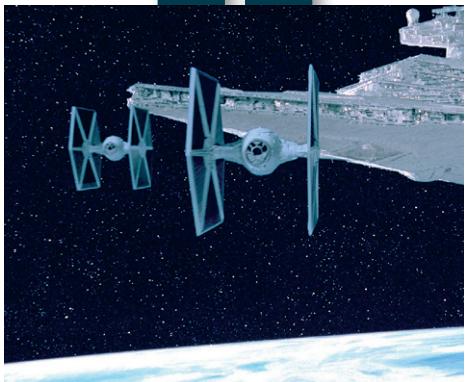
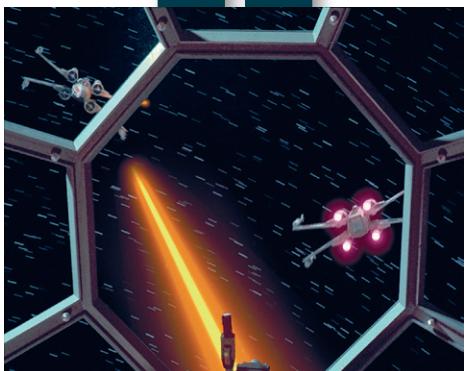
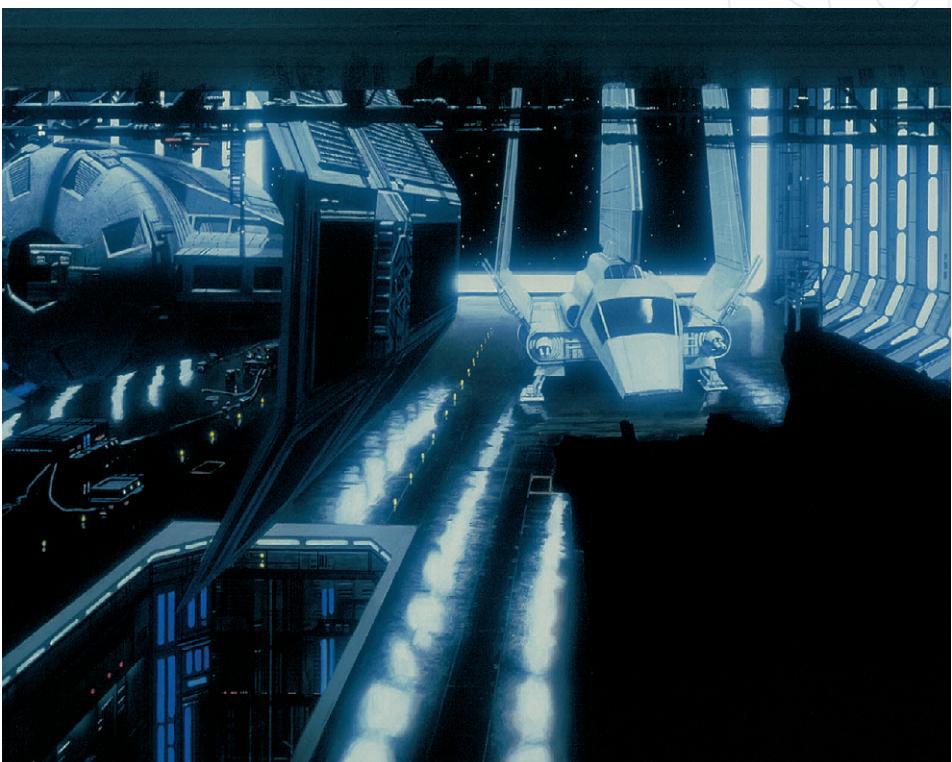
to the more recent CG work. With some

incredible images, we present...

STAR  
WARS



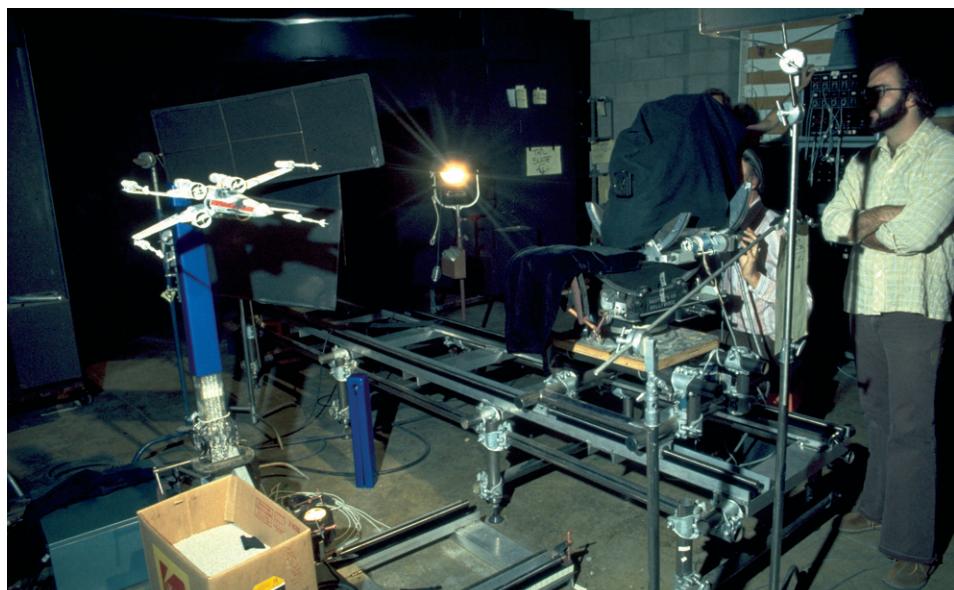
# STAR WARS



Star Wars' prequel trilogy ends in the darkest, yet greatest, way indeed (for the box office too, with an 837,911,979 million dollar income on publishing, without taking into account the November 2005 DVD release). Anakin Skywalker, burned and mutilated after the fight with Obi-Wan Kenobi, became the evil Lord - Darth Vader. The cruel Emperor Palpatine reigns the galaxy with an iron fist, in front of its eyes and to those of a young Grand Moff Tarkin,



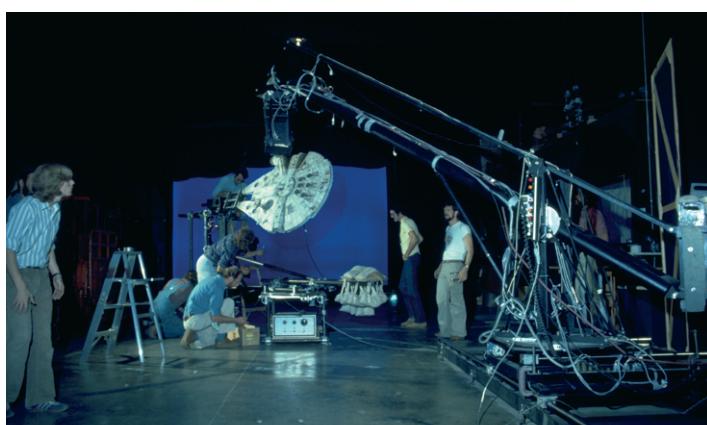
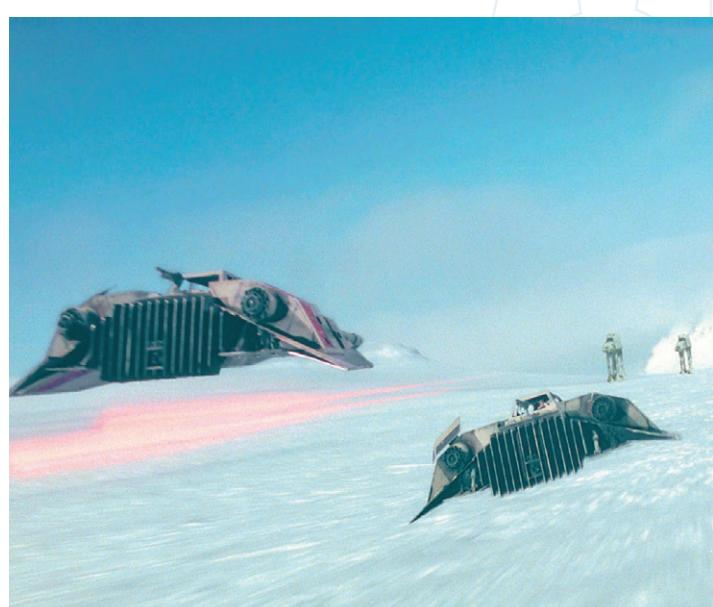
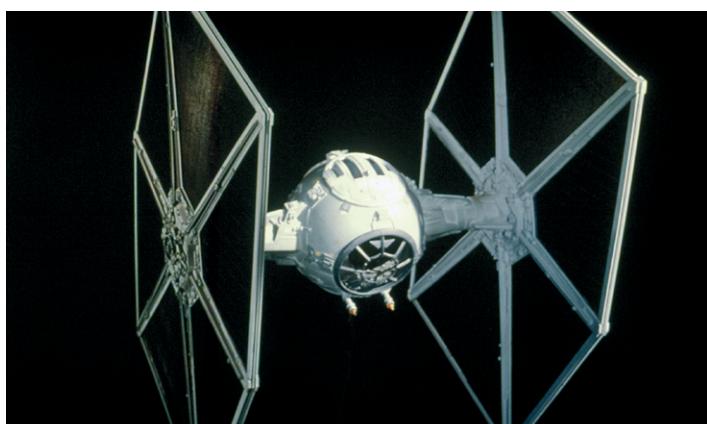
## Star Wars Special Effects History



armoured battle space station, Death Star, which has already been seen in 'Star Wars Episode IV: A New Hope', began taking shape. Whilst Master Jedi Yoda hid in the Dagobah system, Luke and Leila, separated at birth, have been first entrusted to Owen and Beru Lars on Tatooine, and then to the Alderaan planet senator Bail Organa. With 'Star Wars III: Revenge of the Sith', Industrial Light & Magic led us for the last time through the far galaxy, as described by George Lucas almost 30 years ago. Nobody could have ever imagined that a predominantly advertising crew would become one of the most important visual effects studios in the world, winning more than one Oscar with



the Senior Visual Effects Supervisor, Dennis Muren - the one and only artist in this area with his own star in Hollywood's 'Walk of Fame'. In the Star Wars classic trilogy 4th dvd, there is a stunning documentary called 'Dreams Empire', where George Lucas reveals that, months before the Episode IV planned release, ILM had already spent half of the budget on motion-control cameras, developing and hyper-detailed miniature spaceships. Anyway, complete and acceptable shots had still not yet been delivered. Tensions within the ILM became so bad that they couldn't accept any more lost time, so Lucas decided to place the production staff side-by-side with the technical and artistic team, in order to respect all deadlines. The photographic special effects team were John Dykstra (also in Douglas Trumbull's 'Silent Running' team in 1972), supported by Richard Edlun and Dennis Muren. John Stears (007 series veteran) took care of the mechanical-droid effects and the pyrotechnics on stage. From the beginning, it was decided not to use the special effects system developed for Stanley Kubrick's 2001: 'Space Odyssey', since it took too much time and was too difficult to use. It could have been ideal for the slow-motion spaceship sequences, but couldn't fit with the fast space dog-

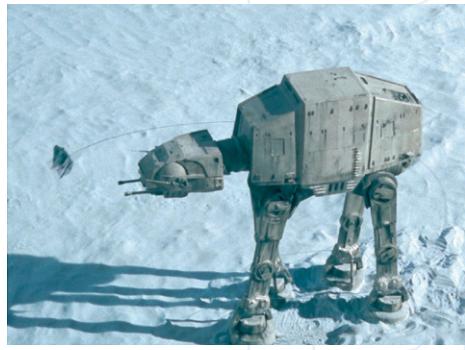




## Star Wars Special Effects History



fights, conceived by George Lucas and drawn by the artistic director, Joe Johnston. When a Rebel Alliance's X-Wing or Y-Wing had to fly to Death Star, or where directed, the motion-control camera had to come from behind or get close from above. When Hans Solo's Millennium Falcon had to take-off from Death Star, it was the huge model that was rotating in order to invert the route, whilst the camera was moving





back along its track. The chance to arrange various elements on the same angle, thanks to the optical printer, gave the ability to use a single model to show an entire flight crew without having to build too many spaceships of the same type (except for those destroyed during special effects). Death Star's surface with miniature explosions, were prepared by Joe Viskocil and filmed at high-speed, mostly in the ILM parking lot, under direct sunlight (key light),



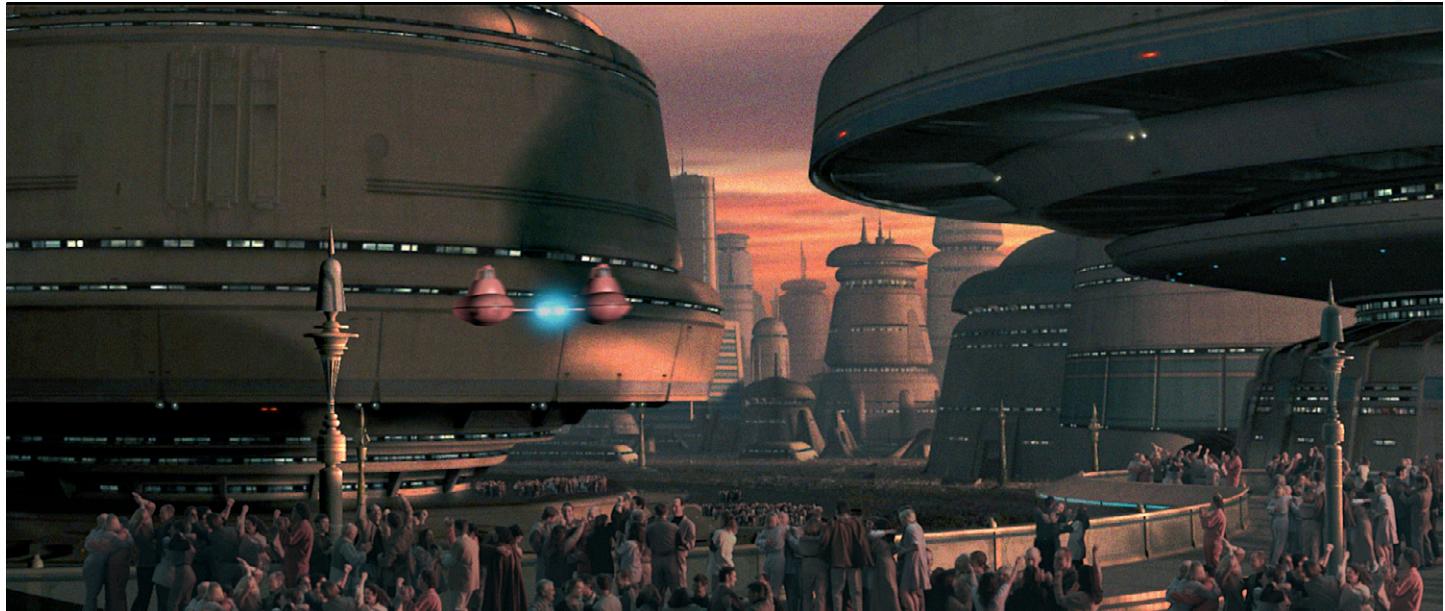


## Star Wars Special Effects History



so as to be able to compensate for the lack of an extended lighting system needed for such a huge model. Death Star's motion-control shots were filmed in the indoor studios, using cameras on long tracks, plus all the necessary supporting hardware to control the camera. Although ILM's budget was limited to 2 million dollars at the time, a large amount of definitive prototypes and models had to be designed, planned and built - not only X-Wings and Y-Wings, but also Lord Darth Fener's personal TIE Fighter, the huge Death Star (a 90cm plexiglass sphere), defensive towers, an imperial Star Destroyer, the spaceship's shell, princess Leila's





Tantive IV, Luke Skywalker's Landspeeder, the Millennium Falcon, the Jawa' Sandcrawler and the famous Blockade Runner Tantive IV (followed by Darth Fener's spaceship in the beginning of the movie). A rather interesting fact for all of the saga fans is that the Blockade Runner should have been playing the role of the Millennium Falcon in the beginning, but its presumed likeness, according to George Lucas, with the Space: 1999 television series 'Eagle' (developed by British Brian Johnson, then supervising Episode V), relegated the model to just 5 shots in the intro of 'Star Wars Episode IV'. Highly detailed and maniacally elaborated in its whole 1.8 metre length, painted with a careful

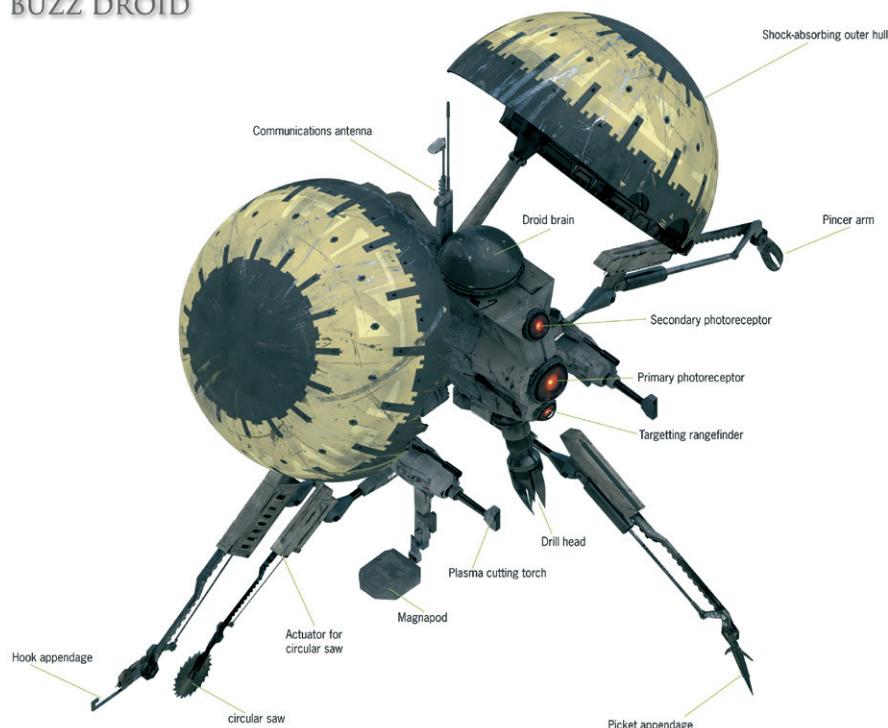




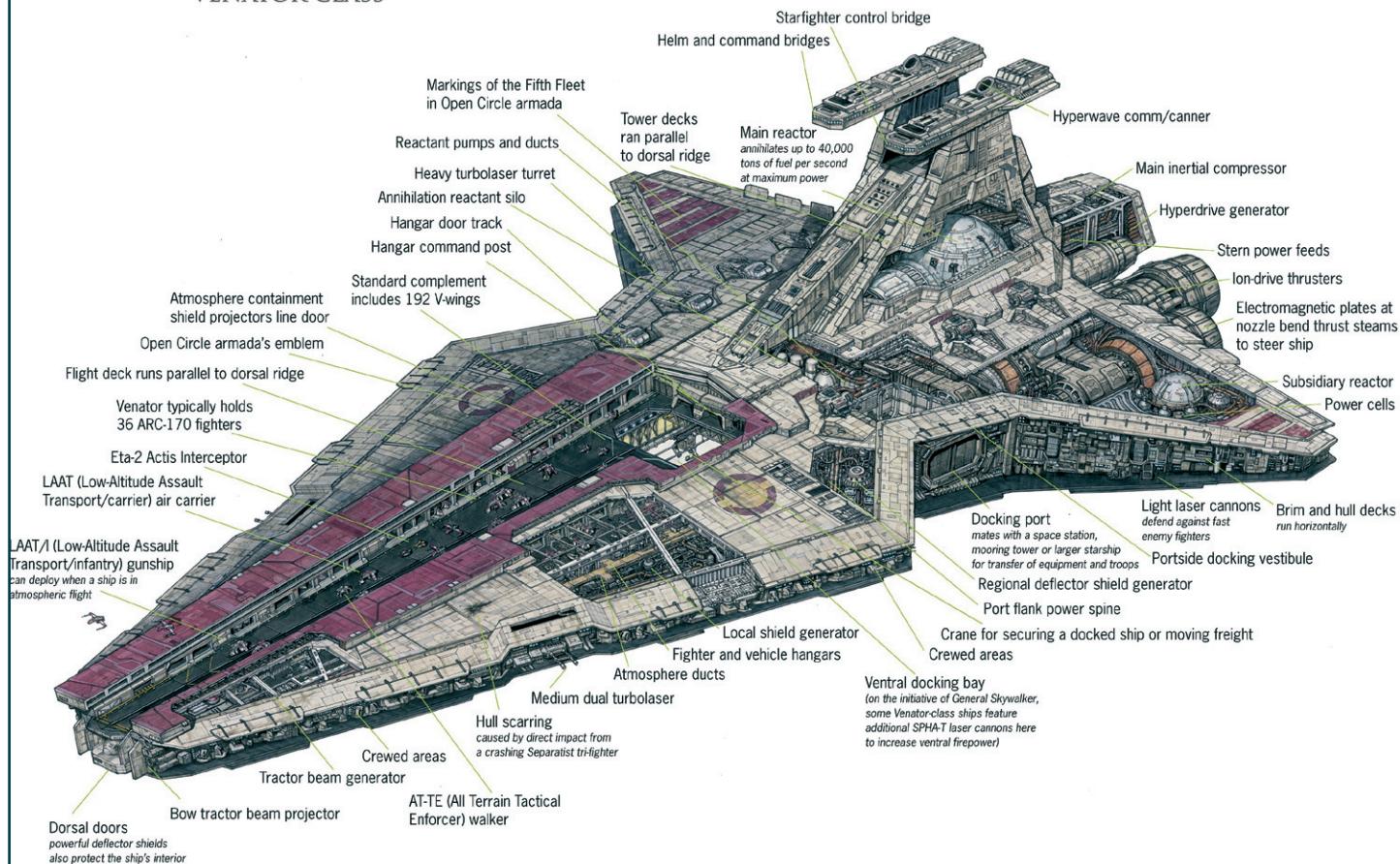
## Star Wars Special Effects History

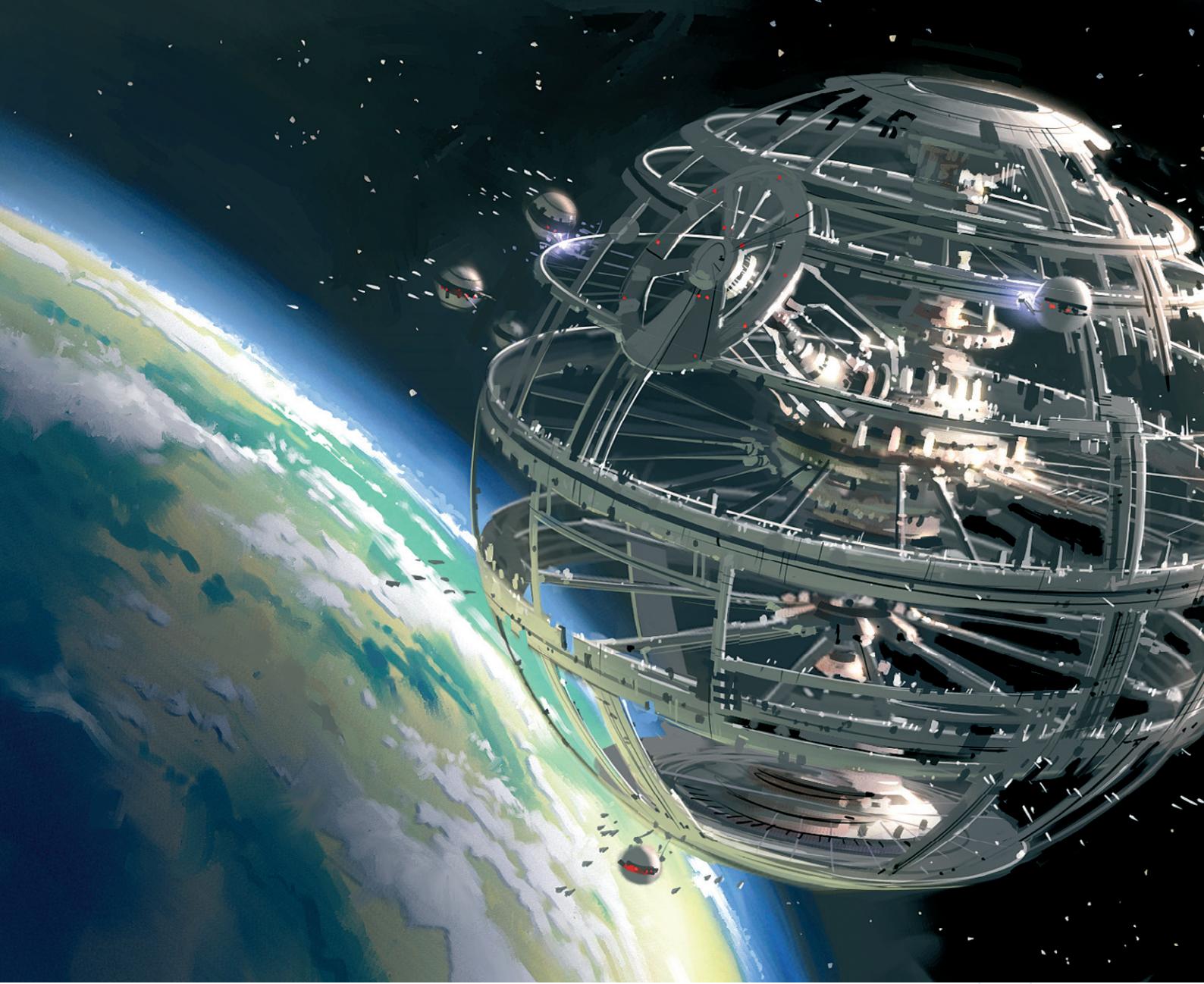
eye in order to make it seem realistic and credible. Because of its "worn out" external aspect, space vehicle, Tantive IV, had a tiny Star Wars poster and a sexy girl from a magazine page in the inside of the cockpit, applied by modellers Paul Huston and Dave Jones, just for fun. Star Wars in theatres, once completed, was spectacular, with plentiful astonishing special effects - some, although not many to tell the truth, were a little cheap. For example, the arrival of the Landspeeder taking Luke, Obi-Wan Kenobi and C1-P8 and D-3BO droids to the Mos Eisley's space place, where vaseline was used in order "to delete" the real land vehicle's wheels. After the release of 'Episode V: The Empire Strikes Back' (1980) and 'Episode VI: The Return of the Jedi' (1983), Industrial Light & Magic, after moving from the inadequate building in Van Nuys to those in Marin County, had reached an enviable experience in blue-

### BUZZ DROID



### STAR DESTROYER VENATOR CLASS





screen shooting, optical systems compositing and stop-motion (or "step-one") animation, realising the stunning battle with the AT-AT and the AT-ST on the frozen planet, Hoth. They also improved their matte-painting, far better than episode IV. An annoying legal battle between Lucasfilm Ltd. and Universal unfortunately took place because of the Battlestar Galactica series

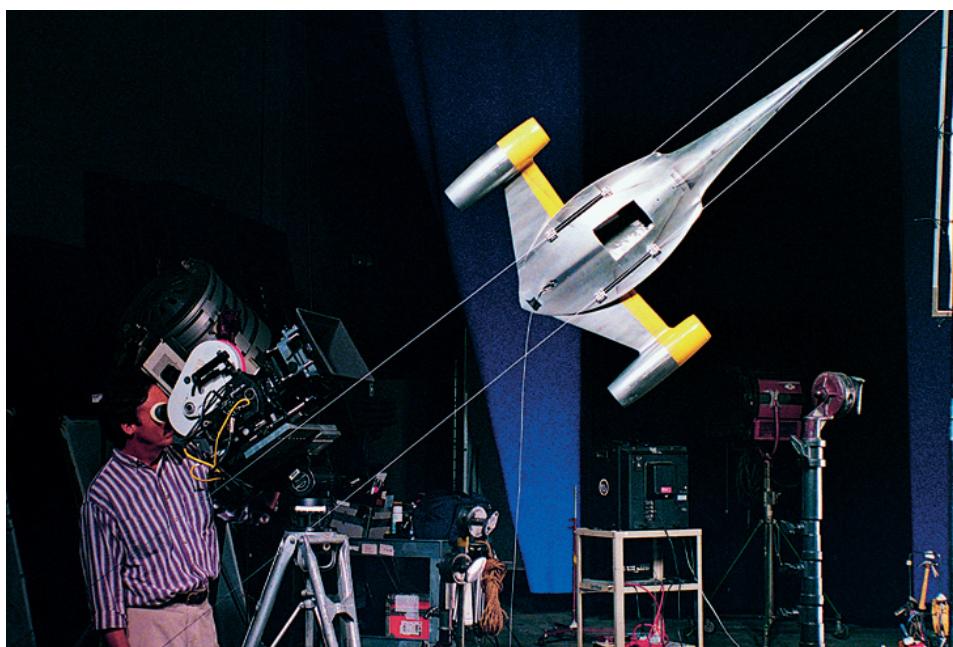
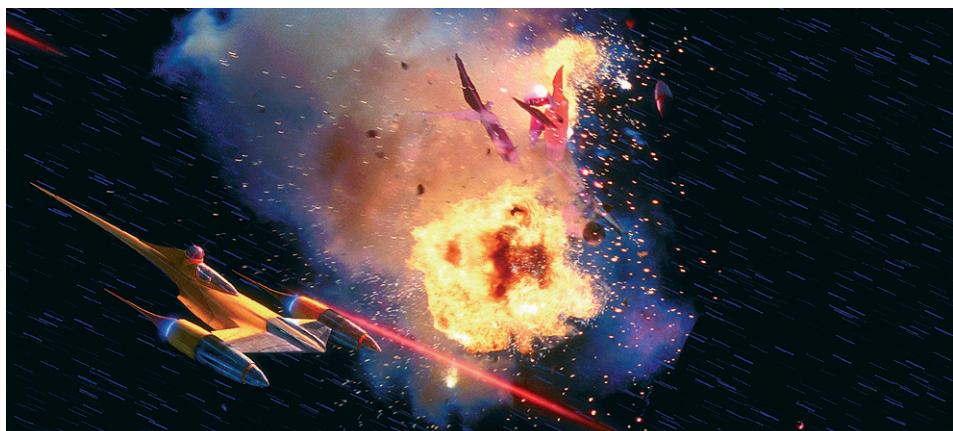
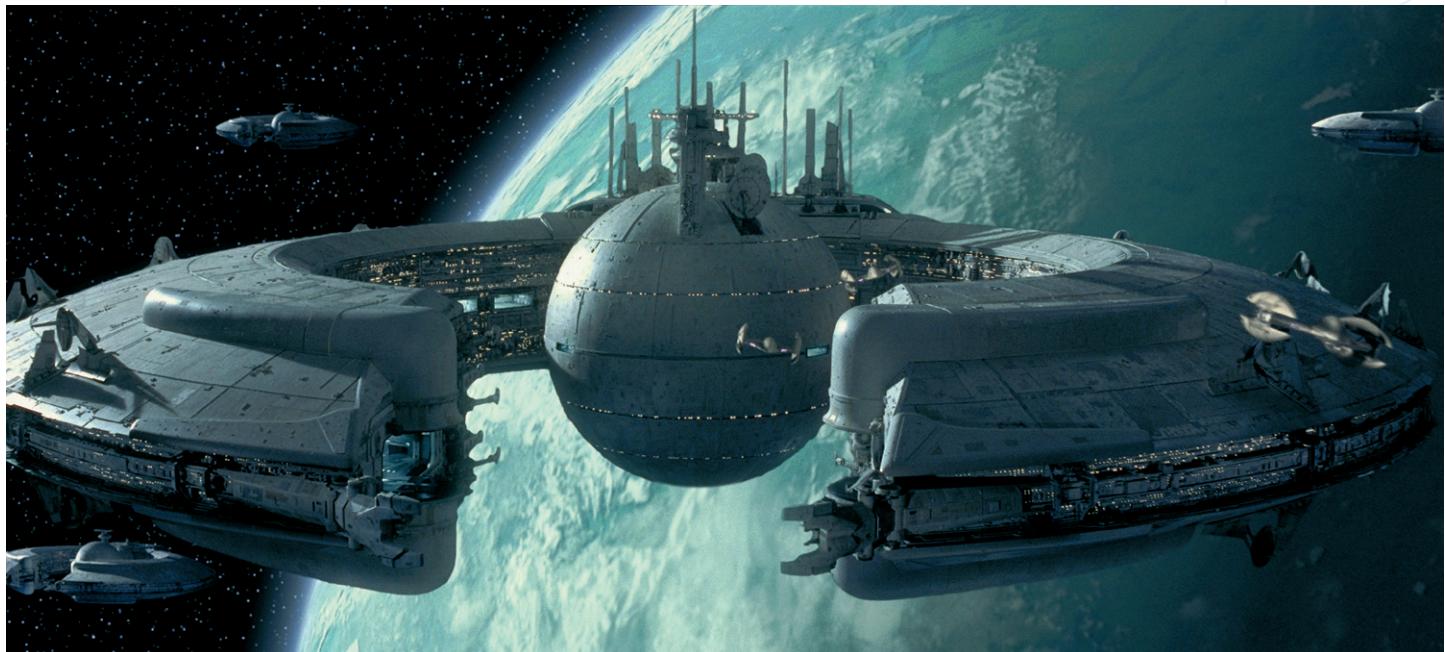


DEATH STAR CONSTRUCTION

RYAN CHURCH  
13 JUN 03  
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(by Glen To Larson), "guilty" of having many similarities with Lucas' Star Wars and for which the old ILM structure had been hired. The Industrial Light & Magic staff split: some followed John Dykstra, who won the Oscar for Star Wars, giving birth to Apogee, whilst the rest moved towards the North of California in order to work on 'Episode V: The Empire Strikes Back', directed by Irvin Kershner. With 400 angles of greater complexity, compared to Episode IV, Industrial Light & Magic supervised by Richard Edlund and Brian Johnson (2nd Oscar in 1979 for 'Alien' by Ridley Scott), faced the challenge and the development of 50 brand new miniatures - including a small, light and easy to handle Millennium Falcon. The requirement was connected to the famous sequence where the Empire's TIE ships were tracking Han Solo's through the asteroid field, shot one-by-one in motion-control as separate

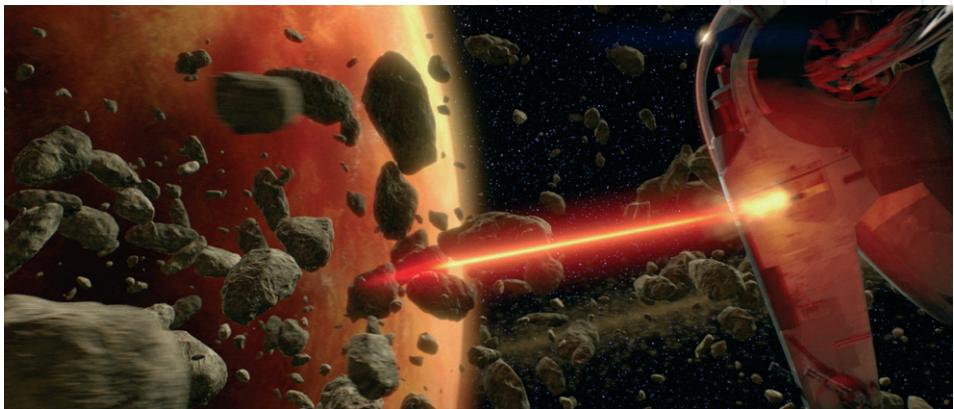




sequences to add as many stones as possible - potatoes were also used at some point! Stop-motion animators, Phil Tippett and Jon Berg, had to work in highly uncomfortable positions since the AT-AT miniatures, equipped with flexible joints, were placed in the middle of a small set with sodium bicarbonate, in order to simulate snow and a photorealistic painting by artist Michael Pangrazio in the background. Since the "step-one" animation is usually done frame-by-frame (like traditional 2D animated cartoons), the animator edits the model a little and shoots a single frame, then moves the object again for the next frame. The sum of 24 intermediate actions produced just an animated second on the screen. It is then easy to understand that if Tippett and Berg had to walk on sodium bicarbonate, leaving traces and footprints, differences in reduced scale would have been made on the land with drastic results on the final product. It was a long and difficult job, managed to the end with a lot of patience and the skills of two talented animators, trying to emulate at their best the famous Ray Harryhausen - with no doubt the leader of stop-motion. After the surviving rebels' ships take-off, protected from the Ionian gunfire, the imperial fleet starts to chase for the Millennium Falcon,

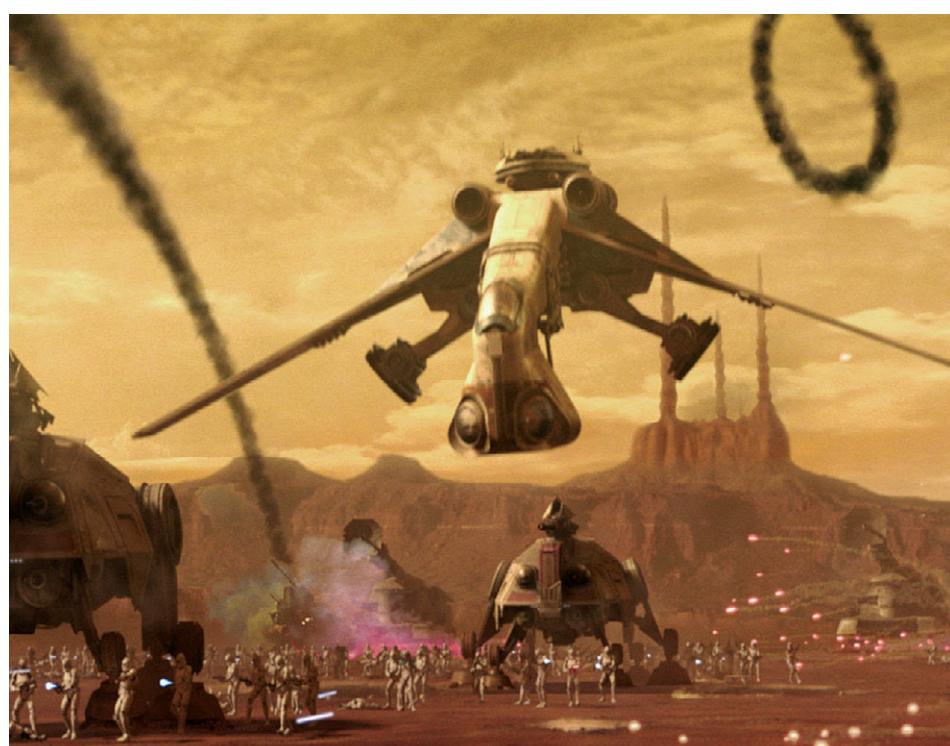


## Star Wars Special Effects History



escaped from Hoth. Industrial Light & Magic prepared not only the Star Destroyer (seen on Episode IV), but also one of the most expensive spaceship models ever produced - the Super Star Destroyer - Lord Darth Fener's flagship, with 250,000 lighting points, completed in just 7 weeks at the astronomical cost of 100,000 dollars! The TIE Bomber had been added to the TIE stellar hunters; it had a brand new design, and was used in order to find Single Hans Millennium Falcon, by nuking asteroids' craters, using a double cylindrical fuselage set between 2 solar paddles. For the arrival in Cloud City, on Bespin planet, realised with matte-painting in 1980 and improved with 3D elements in 1997, aerial resumptions took place using the Continental Systems Rooms Astrovision system, installed on a Gates "Learjet" twin-engine jet, in order to film the background images, before





mixing them with the Millennium Falcon's miniature and the red Cloud car (mining systems defensive aircrafts, photographed on a blue-screen by Industrial Light & Magic with the motion-control camera). The rest of the Cloud City scenes had been filmed in the Pinewood studios in England. In 1980, George Lucas said those sets were too much claustrophobic, because of the lack in outdoor views. That's why in the 1997 Special Edition, huge windows were added in order to emphasize corridors and balcony shots. The 'Empire Strikes Back' did not exceed Episode IV's income, but many considered it far better because of the perfect story construction that, after the triumph of good on evil in 'A New Hope', saw the crew forced to escape, sliding and chased from the Empire, creating inputs for: 'The Return of the Jedi', released in 1983. Episode V is however



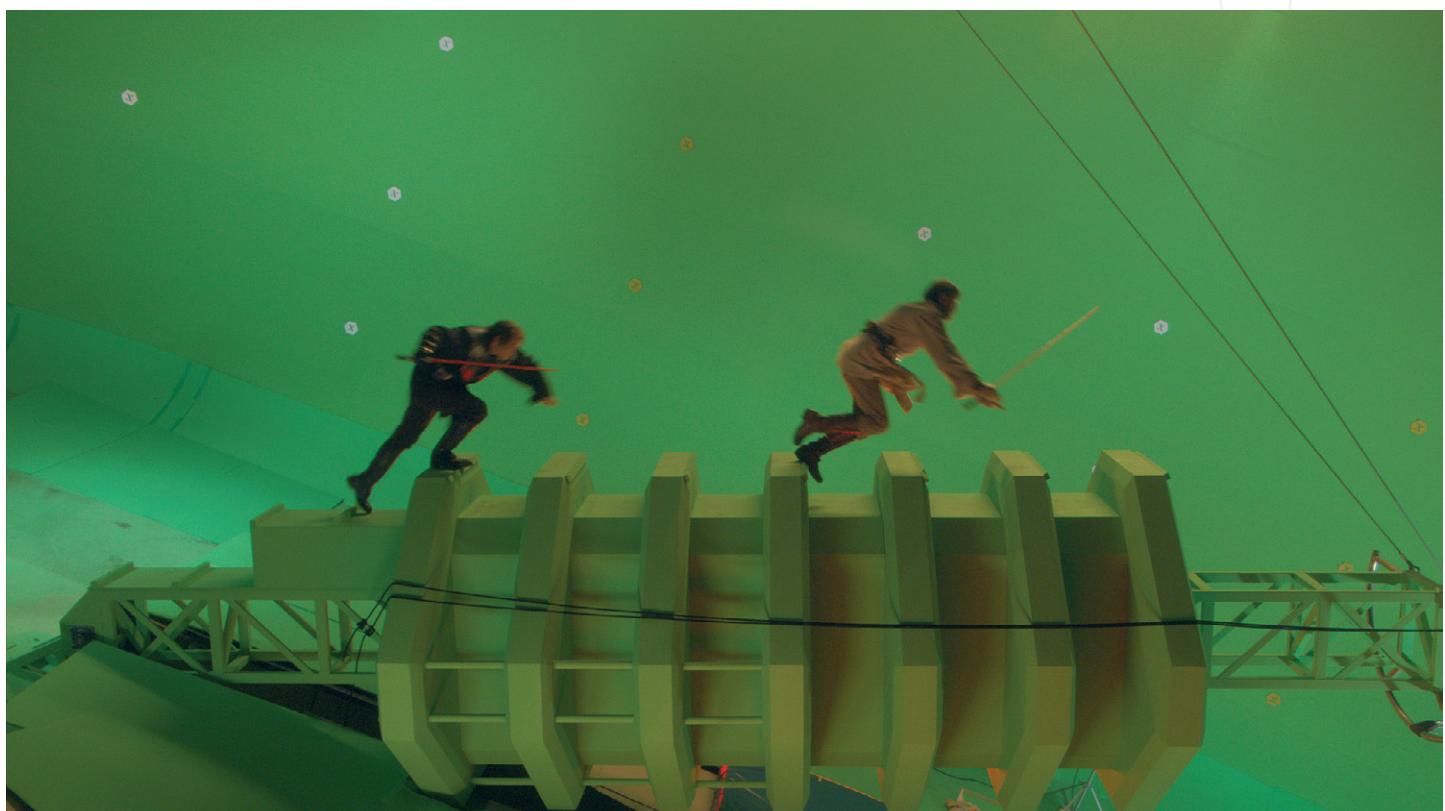
## Star Wars Special Effects History

memorable for the mystical presence of master Jedi Yoda - a puppet, created by Stuart Freeborn and animated by Frank Oz (who became a director himself signing movies such as 'The Dark Crystal', 'Little Shop of Horrors' and 'In & Out'). With the acquired experience of Jim Henson's muppet, he was the ideal person to deal with the delicate challenge of instilling life in Yoda, one of the most loved characters of the saga. For the last epic shootings of the trilogy, comprising a complex space battle (technically complex and highly spectacular), a high-speed race between imperial vehicles on the Endor moon and a war between the Ewoks tribe (similar to cute teddybears) and the Empire's troops, Industrial Light & Magic hired new staff, such as the young David Fincher - director of future video-clips, 'Alien3', 'Se7en', 'Fight Club' and 'Panic Room'.





Return of the Jedi had more models than the previous 2 movies; new rebels A-Wing and B-Wing hunters, Mon Calamari with Home One, Emperor's shuttle Tydirium, the TIE interceptor, Jabba the Hutt's Sail Barge, Skiff's ships, Endor's defence shell generator, All-Terrain Scout Transports (AT-ST), the main reactor, Death Star's external surface and





## Star Wars Special Effects History



the incomplete station itself. Episode VI also introduced numerous pyrotechnical miniature effects, shot under the sunlight and so extremely detailed in order to look realistic. The destruction of Jabba the Hutt's Sail Barge had in fact been filmed outdoors using the High-speed camera, with the model placed on a horizontal

surface and nuked in front of a desert-painted background, behind scaled sand dunes. 'Star Wars Episode VI: Return of the Jedi' has also been the most audacious between the classic trilogy because of the matte-paintings used in order to define almost entire shootings. Lord Darth Fener's shuttle just reached on the





second Death Star, the Stormtroopers, aligned to receive the Emperor Palpatine, the landing platform on the wooden Endor moon, Jabba the Hutt's place and the small Ewok's tree villages, integrated from new digital environments for the Special Edition (Cloud City, Mos Eisley and Coruscant) and the DVD release, strongly wanted by Lucas. Between 1977 and 1983, ILM's matte-artists used oil or acrylic colours spread on glass surfaces in order to paint the environments imagined by George Lucas in the classic trilogy. Since the end of the 80s until today, they have managed the transition from the traditional matte-painting to the digital techniques themselves, directly on computers using the magical software Adobe Photoshop,





## Star Wars Special Effects History



developed by Thomas and John Knoll, Industrial Light & Magic's second supervisor for more than 10 years. Return of the Jedi must also be mentioned for the Speeder Bike 74-Z mad race, which was possible thanks to Garret Brown, using a Steadicam to film the path marked with a stiff thin cable through the trees composited with the spaceship's miniatures, or with the 1/1 scale reproductions, with real actors, photographed in front of the blue-screen. However, it is during the great space battle above Endor's moon that motion-control technology, tested during Episode IV and better managed in Episode V, has been highly used, indeed with huge potentiality. Smooth camera movements, describing perfect parabolas passing between the Imperial Fleet ships and the rebel Alliance, Death star surface, extreme close angles and breath-taking rises with unexpected dives within the inner structures of





the tunnels, gave 'Return of the Jedi' something never seen on the big screen in 1983. It's really worth running through every single shot again and again in order to single out the extreme details of the visual narration and to realise how huge this task must have been for Industrial Light & Magic. There are Nebulon B-class fleets, whose front section design has been inspired by a motorboat, engaging a war with the imperial fleet's Star Destroyer; tens of detonations were done using simple lightning bolts on the spaceships' hulls; an A-Wing hunter, was chased from a pair of TIE Interceptor and unfortunately took a full-loadad hit; on the other side, Empire's pilots became a Y-wing target, and were shot whilst flying over Mon Calamari. On the space background, other individual duels take place; an X-Wing explosion, a Y-Wing



crash against a Star Destroyer and a twisting A-Wing colliding with the Super Star Destroyer Executor which, with no control, hits the new Death Star and disappears in a giant fire ball. The totality of these effects just described, was made by elements separately filmed with a motion-control camera, animated and fixed together with the ILM optical printer. With 3 Oscar awards won for the special effects in each of his 3 episodes from the classic trilogy, acknowledgments for soundtrack, assembly, cinematography, sound effects and technical merits, Lucas was rather satisfied with the relative realism in several sequences which could, still today, challenge with the best ones made with digital technology by concurrent studios such as Digital Domain, Sony Pictures Imageworks and Rhythm & Hues. Regardless,



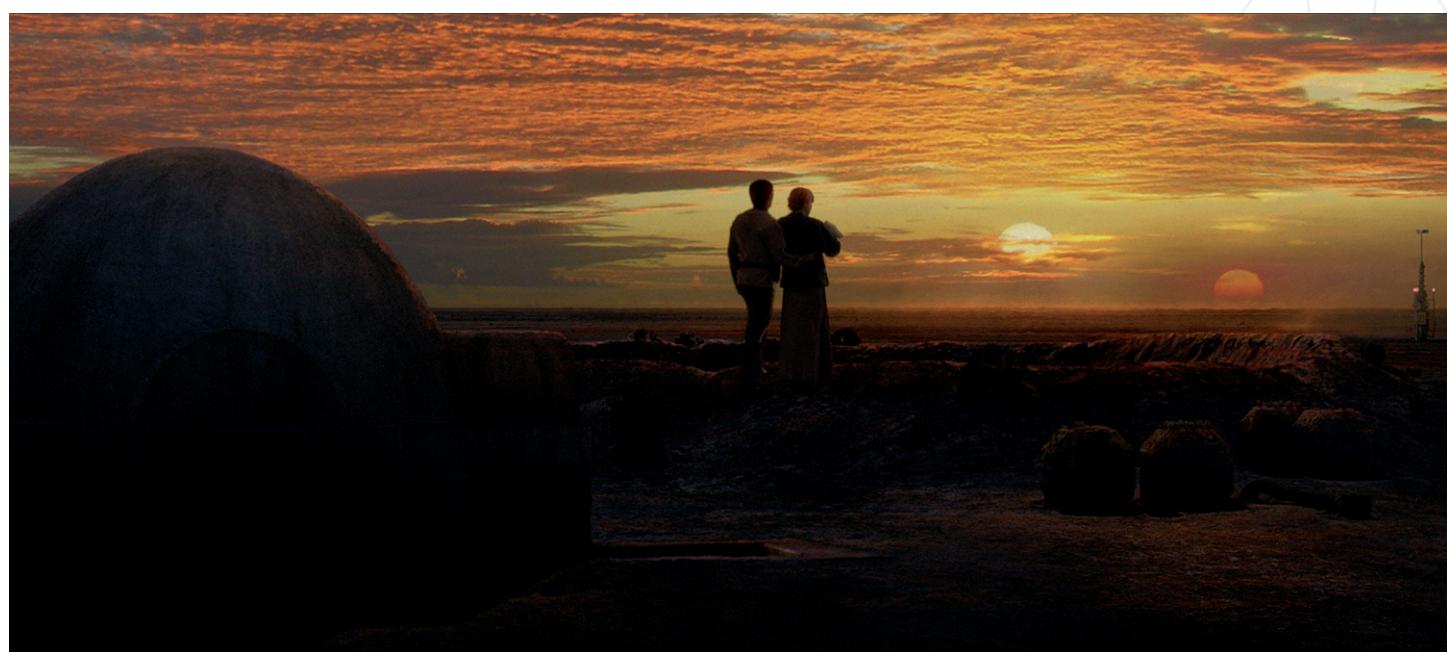


he has never been happy with the assembled editing of Cloud City sets and a few of the Hoth battle imperfections. This led the director to the first 1997 Special Edition's restoration, celebrating Star Wars' 20th anniversary, released in cinemas, on VHS and LaserDisc, introducing scenes and new special effects. From the 3 prequels, Episode I (supervised by Dennis Muren, John Knoll, Scott Squires and Rob Coleman) saw the massive use of spaceship models, filmed on the blue-screen during the Republic Cruiser Radiant VII arrival. Naboo's undersea environment was also made using miniatures, whilst Otoh Gunga's bubble-shaped towns, Bongo's underwater vehicle and creatures were 100% CGI. Jar Jar Binks has also been introduced - the most realistic digital interactive character ever seen on the big screen. Technically perfect, but disliked by Star Wars' fans for his stupid behaviour and clumsiness which is similar to Walt Disney's Goofy, and for his funny way of talking. The Pod Racers run, has been set in a desert-like CGI environment, with 3D and miniature vehicles, whilst Mos Espa's stadium is a model where



## Star Wars Special Effects History

cotton buds make up the audience. For Episode II, released in 2002 (supervised by Dennis Muren, John Knoll, Pablo Helman, Very Snow and Rob Coleman, with 2,000 special effects angles, and 70 minutes of animation - 10 more than Episode I), the relationship between sequences with scaled models and fully 3D were reduced to increase the CGI with the first used in approximately 100 angles, in order to photograph the Mos Espa's spaceport and the Tusken camp on the Tatooine planet, Genosis' arena and battlefield, some of the stunning views on Coruscant,





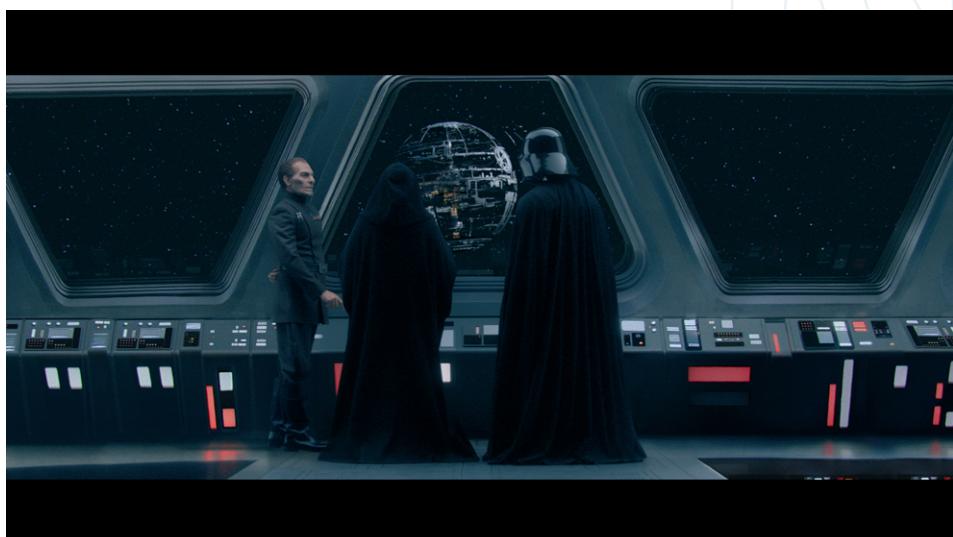
Republic's capital with Dexter Jettster's diner and Tipoca on Kamino's stilt houses - cloners' native land. Asteroid belts battle between Jango Fett's Slave I spaceship and the Jedi Delta 7 hunter is 100% CGI with 3D model textures, obtained with the second film of the classic trilogy's miniatures scansion. ILM's fabric simulator was able to seamlessly combine CGI clothing with the real clothing, often close to one the other, which was fundamental to the final result of the shots with digital characters or stunts. The simulator's engine works from the inside of ILM's Caricature software and the clothes remain firm beside the character's body until the related motion or force applied becomes powerful enough to move them. Realistic magic was possible thanks to the problem-solving friction, causing gowns to crease, different to before when dresses were used only to hit objects that were slipping over. The number of clothing layers is also larger, such as for Republic's senator Jar Jar Binks, creating more complexities in the simulation of the cloth. 'Star Wars Episode II: Attack of the Clones' also tested the fabric simulator on the digital stunts, during the battle between Obi-Wan Kenobi and Jango Fett on a Tiboca City landing platform on Kamino. When Jango, on





## Star Wars Special Effects History

his rocket backpack, drags Obi-Wan legacy by the hands, the Jedi knight is a virtual duplicate "able" to achieve breath-taking acrobatics and impossible stunts that are too dangerous for humans to undertake. Like Obi-Wan in some ways, the Republic's army clones units are also made in CGI. Many different techniques were used in Lucas' movies; from the facial make-up to the radio-controlled animatronics. In the past years, there have been legendary make-up supervisors; the great Rick Baker, with John Stears, Nick Allder, Jon Berg, Phil Tippett, Stuart Freeborn, the make-up artist in Stanley Kubrick's 2001 film, 'Space Odyssey', Kit West and still Nick Dudman for 'Star Wars Episode: The Phantom Menace' and 'Episode II: Attack of the Clones'. Dave Elsey and Don Bies supervised 'Star Wars Episode III' creatures and droids. To know how to properly build a droid from designs, conceptual paintings and renderings done by the artistic department requires multiple skills, from sculpting to mechanics, from electronics to wise choice and the use of colour. Star Wars Episode III effects-wise was judged as evolutionary, not revolutionary, from the supervisor John Knoll - a sum of experiences and technologies developed from Industrial Light & Magic throughout the

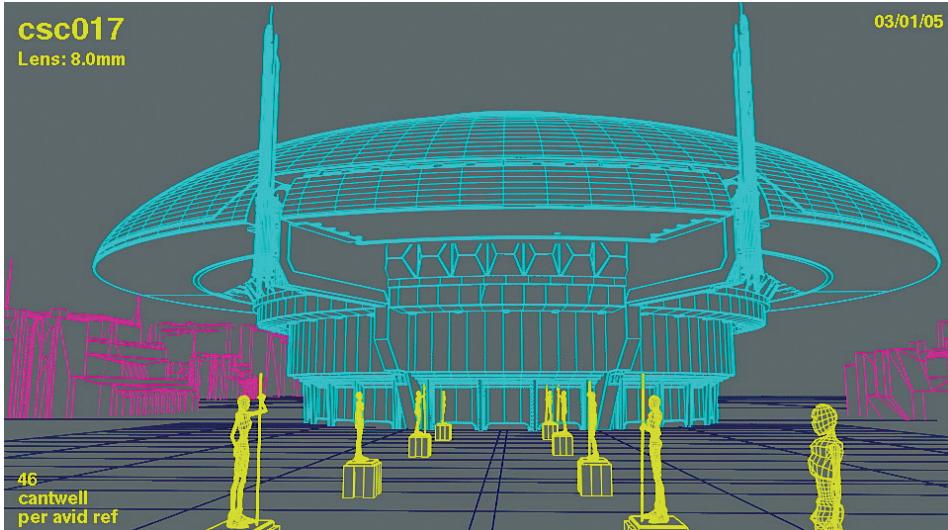




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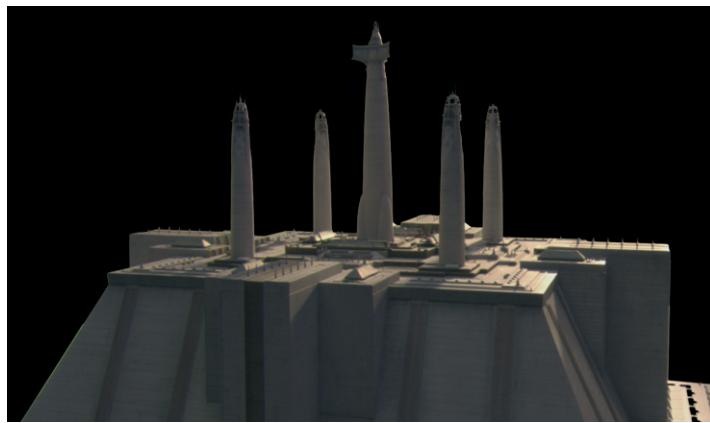
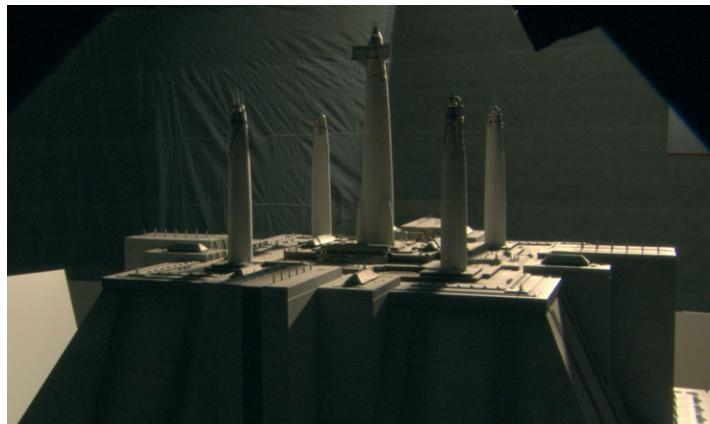


previous 2 movies. In Episode III, John Knoll, Roger Guyett and Rob Coleman supervised 2,151 angles with special effects; 1,269 of them have digital animation for a 90 minutes total (whilst 'Attack of the Clones' had 70 and 'The Phantom Menace' had just 60), 800 CGI characters and 50 3D environments! A huge step ahead considering that Tim Burton's 'Mars Attacks!', released in 1996, had a Softimage 3D Martians managing limit of 18. Star Wars Episode III begins with a long and stunning battle in space between the Republic's fleet, made of Venator class Star Destroyers, clones and Jedi knights driving ARC-170 and Eta-2 hunters, and the Separatist forces led by the General Grievous cyborg. The sequence, lasting an average of 10 minutes, is entirely made in CGI, with no motion-control miniatures or real models used, with the exception of the 1/1 scale of Eta-2, driven by real actors. Basically, ILM used spaceship models in 'Star Wars Episode I' for the last time, where the red Republic's cruiser and the Separatist ships were built, beyond some Naboo's N-1 hunters. From a conceptual design point of view, created by Ryan Church and Erik Tiemens, and assisted by an entire staff of artists, 'Episode III' stepped into a definitive technology, changing from the



## Star Wars Special Effects History

1977 Episode IV. The republican spaceships became huge, Star Destroyers were wedge-shaped and, although they are not the same ones from Episode IV, V and VI, it's understood that the imperial class Star Destroyer will be the next model to evolve to the Darth Fener's Super Star Destroyer. After being attacked by the bug-droids, robotic 'wasters', and saved by Anakin, Obi-Wan Kenobi lands on the Invisible Hand, General

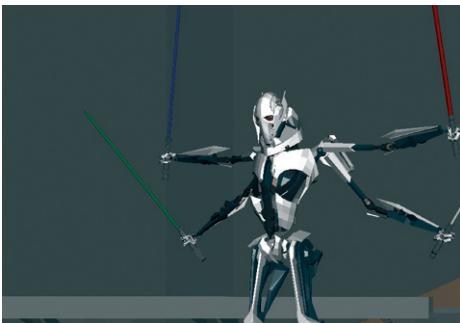
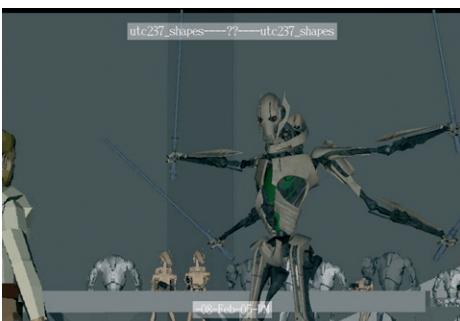
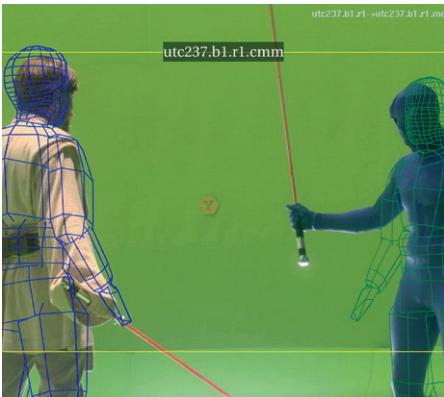


Grievous' flagship, and attacks the Seceders army, Battle Droid. When master Jedi jumps out of the cockpit holding the lightsaber, it's obviously a digital duplicate of the actor, whilst the smashed droids are 3D animated models with data deriving from motion-capture sessions, assembled in sections ready to divide when touched by the Jedi weapon, to which rigid body dynamics have been applied. The most important digital characters





## Special Effects History Star Wars

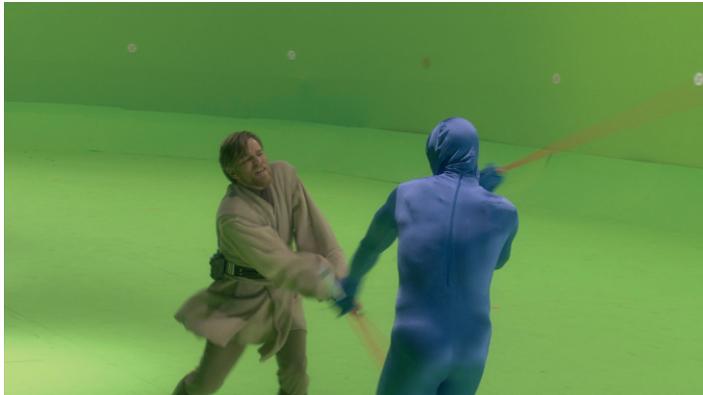


of the movie, Yoda and General Grievous, appeared in 173 and 84 angles, have received many main frames, wanted by the director George Lucas. General Grievous' basic concept, developed by the artists, was an anthropomorphic skeleton placed on the body of a biped character, just like a bug or a crustacean. Grievous always wears a Kalesh warmaster mask, similar to a skull, improved in the bony material's total rendering by the Subsurface scattering. Just by looking at him through the eye-holes, it's possible to understand that is a half-organic half-mechanical being, with snake-skin and eyes. The facial detail level has been therefore less complex when compared to Yoda's, and the body movements were the real "acting". When the camera was distant enough from the head, eye details, deep inside of the mask, were less obvious and the character turned out less threatening than it should have been. The problem has been later solved by making them join the most possible of the upper opening contour, lengthening the vocal apparatus towards the bottom, and perfecting it with metallic extrusions. General Grievous has 4 arms which can handle as many lightsabers taken to defeat Jedi's, and can walk like a biped

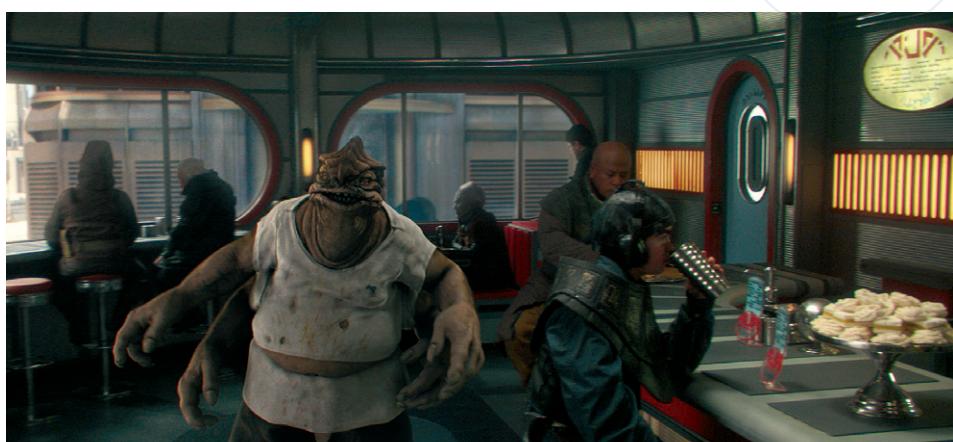
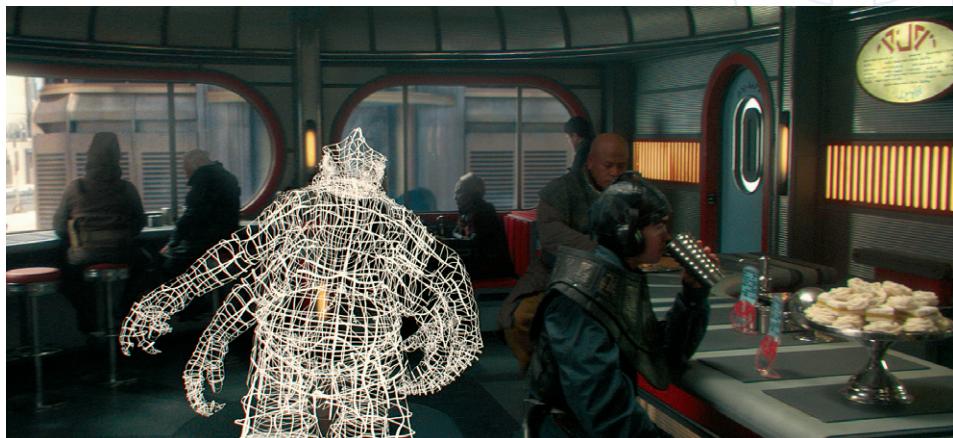




## Star Wars Special Effects History



or a quadruped. Metallic parts interpenetrate the organic and soft ones but all the mechanical components act independently from the body below, animated in a procedural way through 200 articulated nodes. The 3D model has been realised so that a rigid body simulator could animate the chopped parts from Grievous' body during the battle. The cyborg general is made up of 4,591 superficial NURBS on a total of 435,186 Control Vertex. For the duel sequence between Obi-Wan Kenobi and Grievous, Ewan McGregor acted in front of a green-screen with his rival - a stunt man dressed in blue overalls - armed with just 2 light sabers. The other 2 animations have fallen back on ILM staff, since the man dressed in blue was only there to supply McGregor with a visual reference for the posture he had to assume. In the second phase, with the matchmove, 3D meshes were provided and overlapped on the duellers in order to determine their position to the camera. Later on, Grievous' low resolution model was overlapped over the stunt man, then the animators started to animate the model with the 4 arms and light sabers. Since the shots previewed many Battle Droids and Super Battle Droids on the background, they took place in different passages from Obi-Wan and Grievous ones. From the Yoda point of view, the small Jedi's skin had huge improvements in order to fit with the air actions that he would have had to execute, whilst remarkable use of Subsurface scattering has been made in detailed angles. The actual animation has not used MoCap, but





it's been a patient frame-to frame-job done by the "Yoda Team", a group of artists taking care to improve the ILM fabric simulator developed for Episode II. This works by moving the clothing polygonal mesh as soon as it collides with the volume of the various characters - the majority of which were rigid. On Utapau, Obi-Wan Kenobi let his asteroid take off with the stellar hunter Eta-2 in order to ride a Boga. The Boga, a sort of green-ish lizard with a pointed tail, places itself like the missing ring to the evolutionary chain - half reptile, half bird. Obviously, Ewan McGregor acted sitting on a saddle-back and placed in front of a blue-screen, since a Boga is 100% CGI ILM magic animation, with some procedural systems in order to control the skin's reaction with the contact of its 4 legs upon the ground, to make it "slip" over the musculature and to make the feathers react with the movement of the skin. Ewan McGregor and Hayden Christensen, as Obi-Wan Kenobi and Anakin Skywalker, duelled

in front of the green-screen in Fox Studios (Sydney, Australia), moving over partial sets, also covered with green-screen material, to represent the Mustafar's unstable industrial structures. CGI renders replaced elements during the post-production stage. The number of Matte-painting artists increased from 12 to 34 for Episode III and, directed by Jonathan Harb, used 3ds Max and Maya, Maxon's Cinema 4D and Photoshop, and composed 2D elements in 3D atmospheres with Adobe After Effects and Apple's Shake. In order to fit with previous movies from the saga, the asteroids are identical to those seen in 'Star Wars Episode II: Attack of the Clones'. 3D models, with textures, were obtained by the structure of the original carved miniatures, done for the second movie of the classic trilogy, 'Star Wars Episode V: The Empire Strikes Back', and incorporates a Maya tool. In order to quickly generate an asteroid field, the so-called "crater generator" used particles to distribute the texture on the three-

dimensional models. In the conclusive frame of the movie, Bail Organa returns on his spaceship Tantive IV - a realistic enough 3D model used instead of the blue-screen motion-control miniature for episodes IV and VI, under the same binary sunset that it had lit the beginning of Luke Skywalker's great adventure, Star Wars 'Episode III: Revenge of the Sith'. Whatever future George Lucas' saga may have, 3D made or with real actors, we will always be here to involve our readers with the magic evoked from the far, far distant galaxy...

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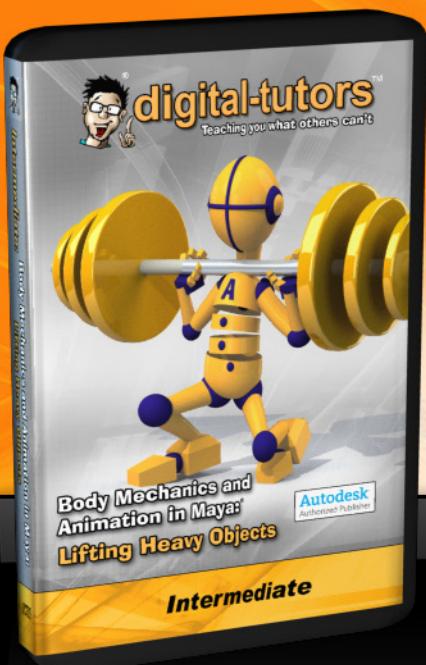
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A close-up, underwater shot of Harry Potter swimming. He has a surprised expression, with his mouth open and eyes wide. A mermaid with long, flowing, light-colored hair is swimming behind him, her hair flowing in the water. The lighting is dim, creating a mysterious and magical atmosphere.

# HARRY POTTER

"One of the biggest challenges in Goblet of Fire was the underwater sequence...The Framestore CFC team did such an amazing job that you really believe you're swimming with Harry in this mysterious yet beautiful underwater world, even though it only existed in the computer. It's one of my favourite sequences in the movie."

Jim Mitchell, Visual Effects Supervisor,  
Harry Potter and the Goblet of Fire



# HARRY POTTER

The arrival of the latest instalment of the world's most famous boy wizard has become the most eagerly anticipated events in the cinematic calendar, and Harry Potter and the Goblet of Fire is no exception. The fourth adventure of Harry, his friends and his enemies opened on November 18th in the US and UK. Directed by Mike Newell, the Warner Brothers presentation features many familiar characters, including Daniel Radcliffe (Harry), Emma Watson (Hermione) and Rupert Grint (Ron), as well as plenty of new faces and creatures. Having already triumphed with creatures created for previous Potter films (the Basilisk and the Hippogriff, to name but two), Framestore CFC was once more invited to join the fun. The company faced some of the toughest

challenges yet thrown at it by a series that has consistently raised the bar on cinematic digital visual effects. Framestore CFC delivered over 200 shots for Goblet of Fire, including an astonishing underwater sequence, a carriage drawn by seven Pegasus-like creatures, and a cheeky quill pen with a character all its own. The key event in the Goblet of Fire is the Triwizard Tournament - a sort of Wizardry World Cup - which had been discontinued for many years because of the high mortality rate, but which has been reinstated this year. Harry finds himself participating, vying for the Triwizard Cup not only with fellow Hogwarts pupil Cedric Diggory, but also with Fleur Delacour and Viktor Krum, champions from the colleges of Beauxbatons and Durmstrang. The tournament takes the form of three Tasks, which challenge the contestants in a variety of dangerous magical environments. The Second Task takes place in the huge Black Lake, the mysterious body of water overlooked by Hogwarts. They are to dive into the lake

and "recover what has been taken from them" - a mission which only becomes clear as they explore the mysterious depths. It was the creation of these depths that formed the main part of Framestore CFC's work on the film. Once under the surface, Harry temporarily mutates, growing gills, webbed fingers and flipper feet to cope with life under water. Fleur and Cedric adapt to life underwater by having a magical air bubble around their mouths, while Viktor becomes half shark. As he travels deeper down through the lake, Harry enters 'forests' of undulating kelp. A mermaid - not the siren-like beauty of popular myth, but a fishier, far less seductive figure, greets him with a song. She leads him to some underwater ruins in which Harry discovers what the purpose of the task is. Four children have been magically bound, and float, suspended and unconscious before him. Harry rescues Ron, and attempts a further rescue, but is warned off by the mer-people - who indicate that the others are to be rescued

## Harry Potter Framestore work on

by his fellow contestants. However, Fleur has been attacked by highly dangerous creatures called Grindylows (think squid-meets-piranha) and is unable to carry out her rescue. It is up to Harry to use all his wits (and a handy spell or two) to save the final victim and escape the vicious Grindylows... "Without taking anything from the other facilities who worked on Goblet," says VFX Supervisor Tim Webber, "I do think that our 'Task' was among the toughest on offer. I'm not sure that something like this has ever been attempted before, where the whole of a sub-aqua environment in every shot is completely CG." The point is taken up and emphasised by CG Supervisor David Lomax. "The sheer length of the sequence - we delivered over 6 minutes of underwater footage - was pretty daunting. When you add in the facts that it was all CG (blue screen acting excepted), with everything moving - all the plants and so on - and with even the medium through which you are looking at the action consisting of CG

water with its distortions and floating particles - well, you're talking huge quantities of data and geometry." The shoot for the sequence took place over several weeks, largely at Leavesden Studios. Says Tim Webber, "We shot what we could in the way of underwater blue screen material of the actors performing in a tank, but there were all sorts of limitations placed on them by the demands of the script and the environment. For instance, even with divers in the tank supplying Daniel with oxygen prior to the camera's rolling, we'd still have to wait for the bubbles to clear the shot before action could start, which cut into his available acting time. So, in addition to creating every single element of the underwater environments, we also had to create a CG Harry to carry out some of the action - and not just in long shots." Framestore CFC's work began with the creation of the enormous, multi-tiered platforms that are both the location from which the competitors start the Second Task, as well as the site from which

the spectators watch. An impressive aerial shot created entirely in the computer introduces these structures - CG constructs in composited lakeland environments, before we move in close for the lead up to the event. After Harry dives in, he finds his body adapting itself to the underwater environment, and he soon starts to take advantage of his flippers, webbing and gills, relishing the experience. As he moves deeper into the lake, his (entirely CG) surroundings - the rocks, the plant life - make for an extraordinary and mysterious atmosphere. The Framestore CFC team had originally anticipated creating just three varieties of kelp by way of vegetation, but this grew to more than 10 iterations as the work progressed. The fact that Framestore CFC had to compose and implement every single aspect of these shots called for a much greater degree of creativity and artistry than is normally expected from VFX teams. "Getting the atmosphere - the sense of buoyancy and fluidity, for example, both in the visible elements and in





the camera moves themselves, were crucial in these scenes," says Max Solomon, one of the team's two Animation Supervisors. As well as Harry, CG versions of the four unconscious victims and the Krum-Shark were also required.

Of the CG creatures, the

Grindylows were the most challenging, not least because there are more than 100 of them on screen in some shots.

Whilst automated 'cycles' were used in a limited fashion, as much of the Grindylow movement as possible was carried out using hand animation.

One tool that proved highly useful was the in-house 'Choreographer' software. This was originally developed in tandem with the Charlie and the Chocolate Factory team who needed something that would help bring large numbers of squirrels to the screen. The software was further developed and refined by the Goblet team to assist them in their Grindylow wrangling. Included among the other sequences that Framestore CFC handled were the dramatic arrival of the Beauxbaton team's carriage - drawn by seven Pegasus creatures. The team were able to return to much of the geometry they'd created when building Buckbeak - the widely acclaimed



Hippogriff for the third Potter film. The creatures were substantially tweaked in order to create the flying horse form, and the results are spectacular, with shots of the coach and seven being among the first to be used in teasers for the film. The journalist Rita Skeeter appears for the first time in Goblet of Fire, a tabloid journalist and muckraker. Working as she does in the world of magic, her pen could not be anything less than a magical quill which takes dictation without being held, jumping across the page as people speak. Of course, a gutter journalist's pen is going to have its own ideas about what's occurring, and will write accordingly. Imbuing this little object with a character all its own in the space of just 19 shots was an enjoyable challenge for Framestore CFC's animators. Similarly, using hand drawn animation rather than relying overly on computers, gives a stained-glass window that comes to life during a scene between Harry and Moaning Myrtle a much more natural and beautiful look. Looking back on 18 months work - from first conversations to final delivery - spent by 130 Framestore CFC artists and technicians, Tim Webber is philosophical. "The biggest challenge," he says now, "Was the sheer number of big challenges."

For more information please contact  
Stephanie Bruning [Stephanie.Bruning@framestore-cfc.com](mailto:Stephanie.Bruning@framestore-cfc.com) or  
Martin Parker [Martin.Parker@framestore-cfc.com](mailto:Martin.Parker@framestore-cfc.com)  
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Marcin Solarz  
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Marco Menco  
bingo  
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Sven Rabe

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Marek Denko

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## THINKER

Marcin Solarz

[marcin.solarz@neostrada.pl](mailto:marcin.solarz@neostrada.pl)



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Tamás Tóthfalussy

tottarie@freemail.hu

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mail.ru





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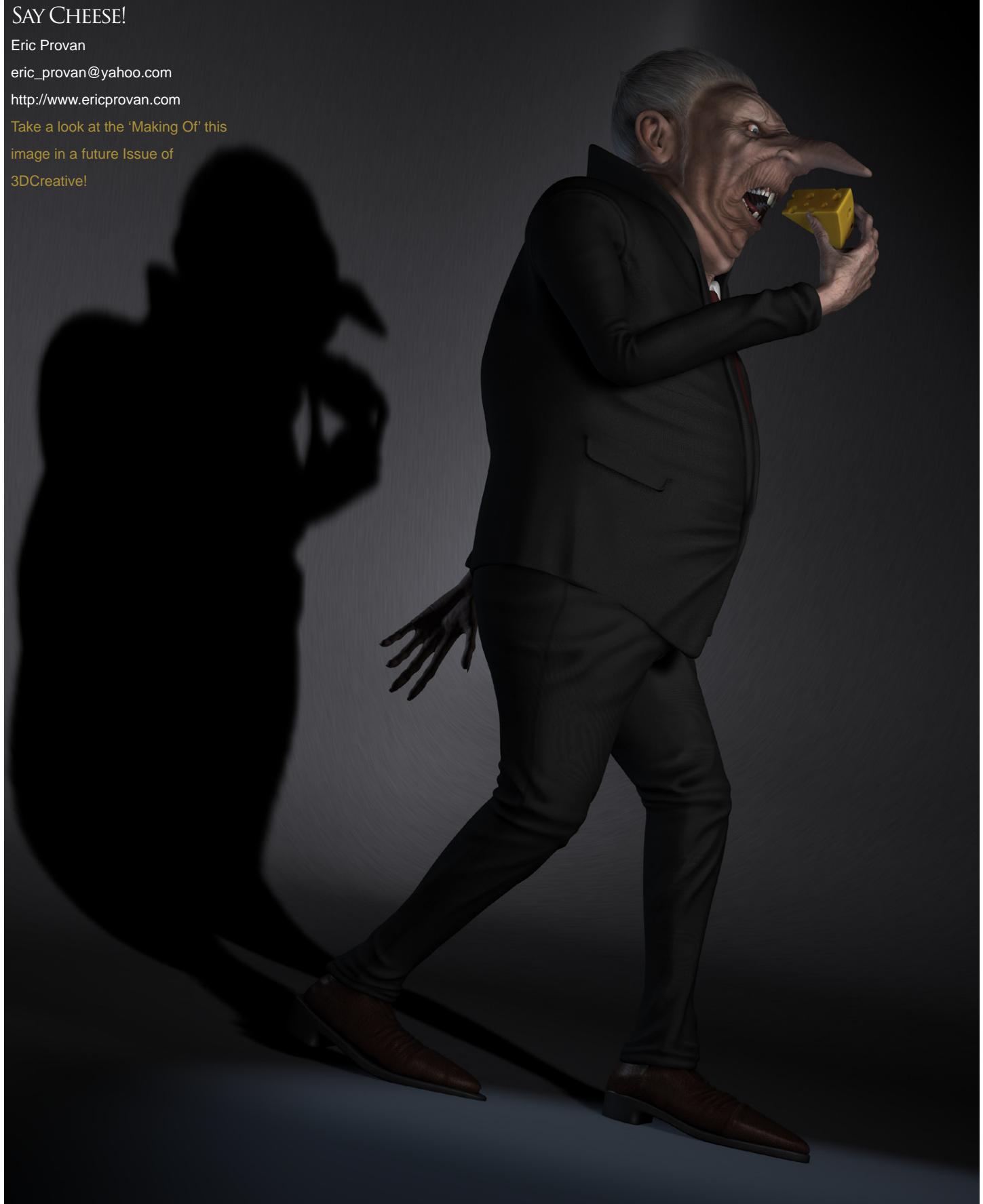
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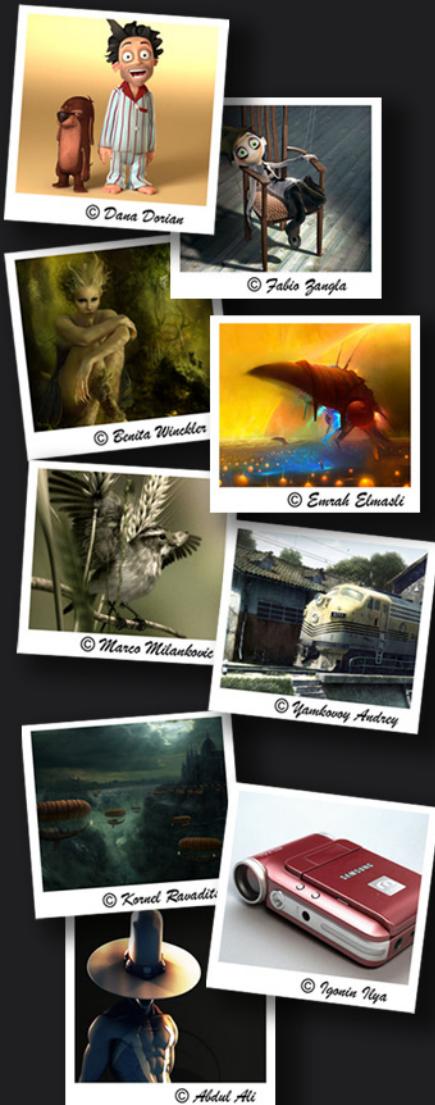
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REALISTIC  
FLESH

SEBASTIEN SONET

shows us how to make realistic flesh with Zbrush, 3DS Max and Mental Ray.

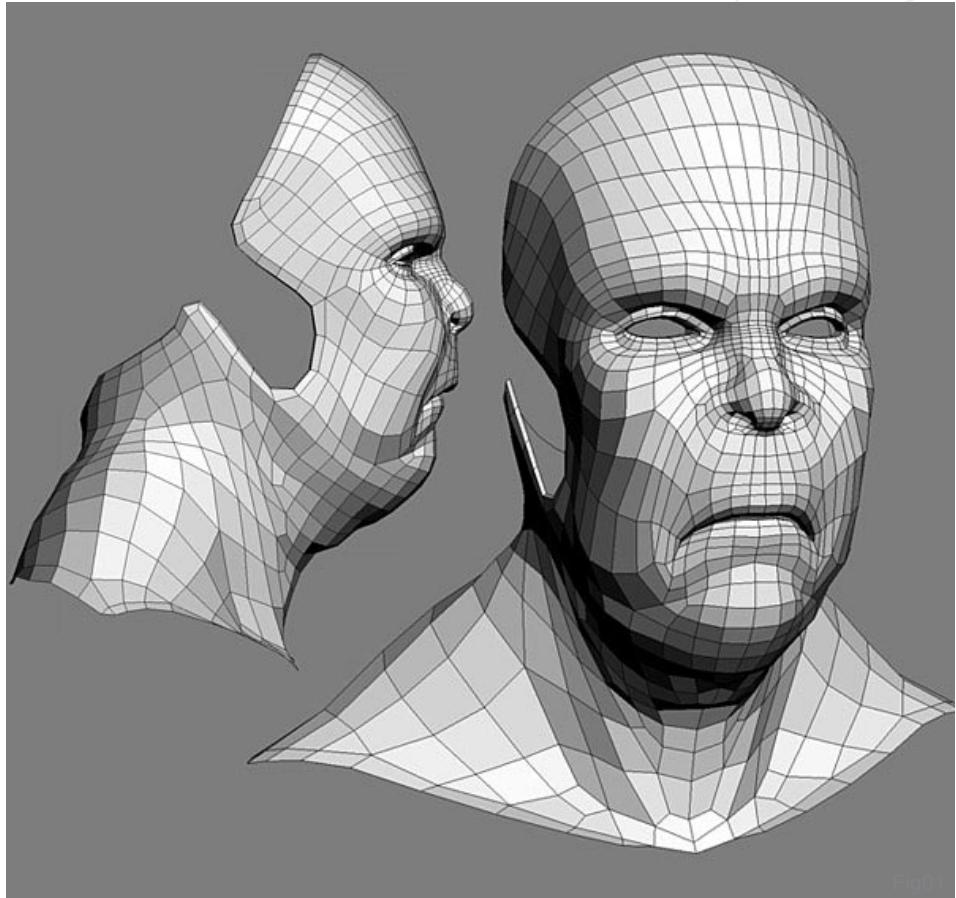


Fig01

## CREATING REALISTIC FLESH

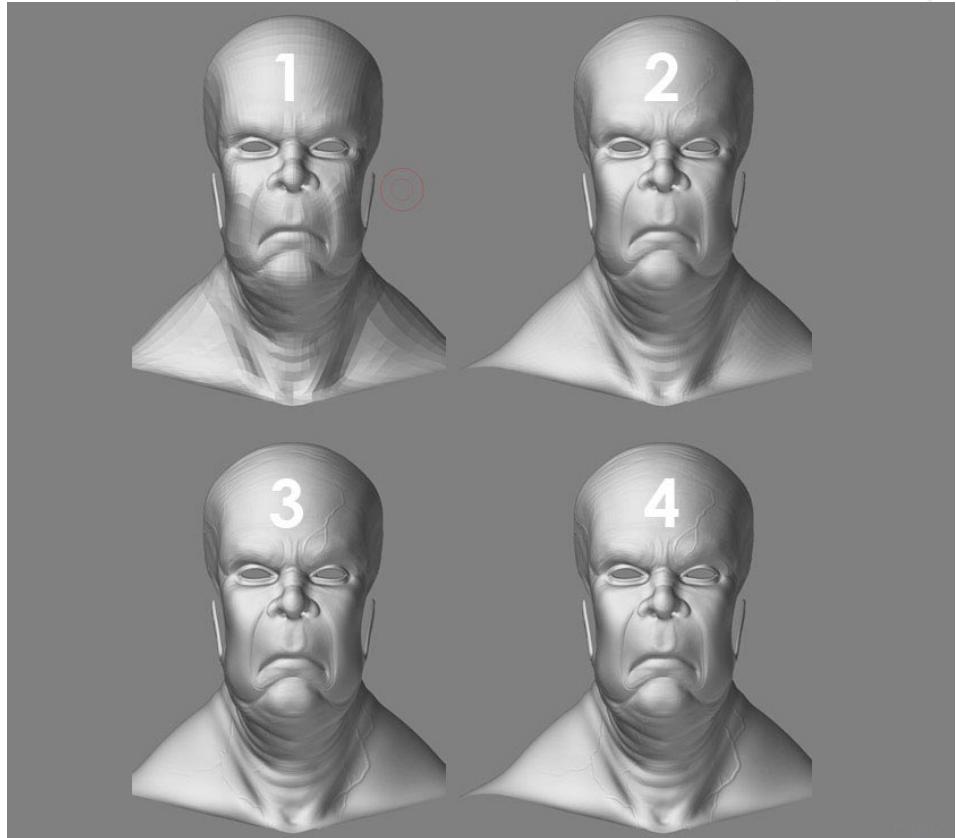
This step by step tutorial shows my method of making realistic skin and flesh renders, using Zbrush, 3DS Max and Mental Ray. It takes part in an image which I'm currently working on.

### BASE MODEL

The mesh is based on a generic head I made few months ago. (Fig01)

### ZBRUSHING

After unwrapping, the mesh is imported into ZBrush. I added all the details. You can find a lot of samples and tutorials on the web about that. (Fig02)





Base diffusion map



Fig03b



Fig03



Base bump map

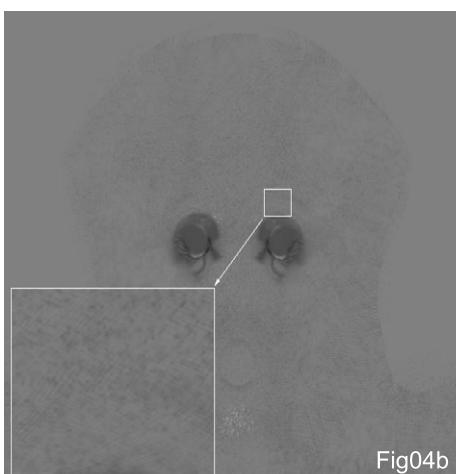
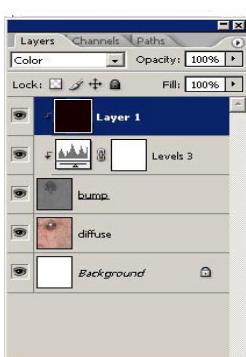


Fig04b



Fig04



Result diffuse map



Fig05

## PAINTING THE MAPS

**Diffuse map (fig03a+b).** When the detail level is ok for me, I begin the diffuse map painting, with Zapplink. **Bump map (fig04a +b).** So, I do the same thing for bump mapping, using the BumpViewerMaterial and ZAppLink. **Improve the diffuse map (fig05).** At this step, the diffuse map needs to be mixed with the bump map, to add cavity colour details. This will improve the map quality. **Subdermal map (fig06).** Now, I go back into Zbrush to paint a subdermal map, based on the diffuse map. With shader settings, this map will be very discreet, but it will add a great realistic effect. For example, to stay discreet, veins are not painted onto the diffuse map, but only onto the subdermal map. **Specular map (fig07).** Now, I have all the materials I need to begin the lightning and render process.



Fig06

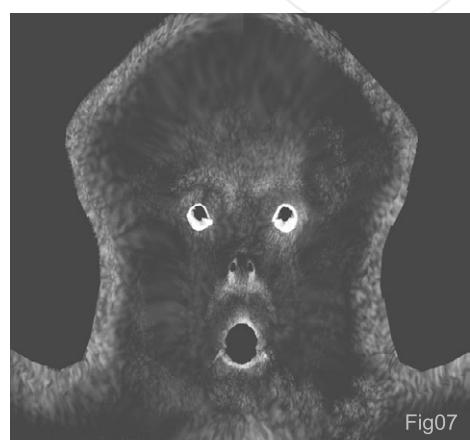


Fig07



**SSS Fast Skin Material (mi) Parameters**

Scatter group: A  
Lightmap size (in % of render size): 50,0  
Number of samples: 64  
Bump shader: Bump (3dsmax) (Bump (3dsmax))

**3-Layer Diffuse Subsurface Scattering**

Ambient / Extra light  
Overall diffuse coloration  
Unscattered diffuse color  
Unscattered diffuse weight: 0,3  
Epidermal (top) layer scatter color  
Epidermal (top) layer scatter weight: 0,5  
Epidermal (top) layer scatter radius: 0,8cm  
Subdermal layer scatter color  
Subdermal layer scatter weight: 0,89  
Subdermal layer scatter radius: 2,5cm  
Back surface (through) scatter color  
Back surface (through) scatter weight: 0,5  
Back surface (through) scatter radius: 2,0cm  
Back surface (through) scatter depth: 2,0cm

**2-Layer Specularity and Reflections**

Overall specular weight: 1,0 M  
Edge narrowness (higher = narrower): 5,0  
Specular Color #1  
Specular weight #1: 0,9  
Specular Edge Weight #1: 0,774  
Shininess #1: 5,0  
Specular Color #2  
Specular weight #2: 0,29  
Specular Edge Weight #2: 0,0  
Shininess #2: 33,0  
Reflection weight: 0,0  
Reflection Edge weight: 0,0  
Reflection glossiness (0 = mirror reflection): 1,7  
Only reflect environment  
Local environ: None

**Advanced options**

Lightmap gamma curve: 0,75  
Scatter indirect illumination  
Scale conversion factor: 1,0  
Scatter Bias (+/- 1,0): 0,12  
Falloff strength: 2,0  
'Screen' (soft) compositing of layers

Mix between bump map  
and normal map

Diffuse map

Subdermal map

Specular map

## LIGHTING SETUP

The lightning setup is a basic 3 point setup (fig08)

## SHADER SETTING

Here are the settings I used for the skin shader. It might be adjusted to your own needs. (Fig09)

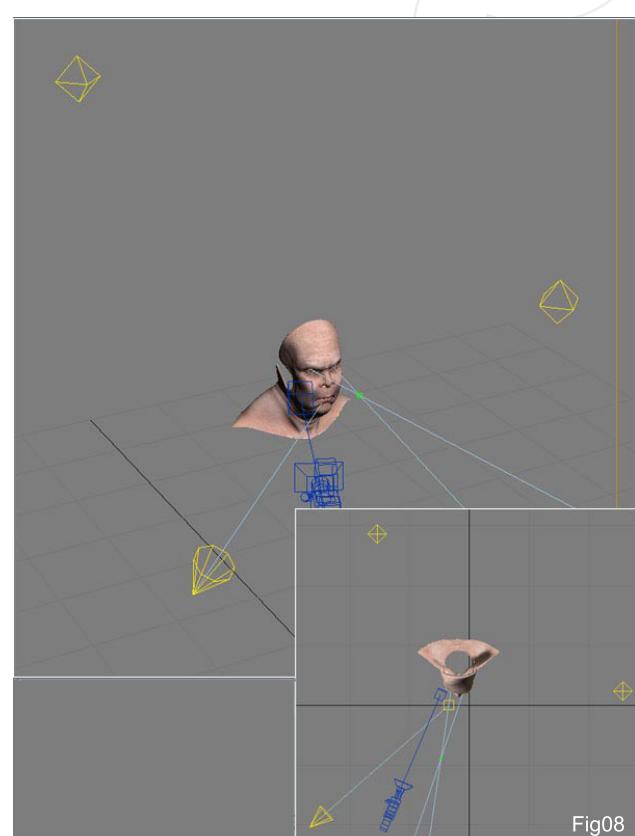


Fig09

Fig08



## STEP 6 - FINAL RENDERING

Here the final rendering. It's just a base. You can improve it by mixing with occlusion map, colour corrections,... (Fig10)

SEBASTIEN SONET

For more work from this artist please visit

[www.publink.fr](http://www.publink.fr)

Or contact

[xxeb@publink.fr](mailto:xxeb@publink.fr)





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TOP  
SECRET



# TOP SECRET TIPS & TRICKS

BY WAYNE ROBSON



# TIPS & TRICKS

What I'll be presenting here are some tips and tricks that are sometimes less well known or totally new to my knowledge to a large amount of Zbrush users. These solve problems you may have in your workflow or help to make your modelling experience more pleasurable and exciting. So without further ado let's get right down into it.

## LOCAL SUBDIVISION IN ZBRUSH V2

What is local subdivision? Is it a regional football league for morons? No it's a way of subdividing a specific area while leaving other areas undivided. The advantage of this is your higher levels are left intact with all the details you've added. While other applications on the horizon have features such as local subdivision, many people seem not to have noticed (or simply forgotten) that Zbrush version 2 is capable of it already. (Fig 02). Let's take a scenario that I'm sure all of us have had at one time or another. You're coming to the end of detailing a model and you know if you can squeeze one more subdivision out of your machine you can get exactly the detail you need to make it look its best. But oh no! You machine has reached its poly count limit and Zbrush either crashes because you don't have enough RAM or maybe you're using an older machine. Whatever the reason, for a great many of these times when normally people start thinking of moving onto another model, and putting the one they have having trouble with to one side until they upgrade, you can actually squeeze out that last detail you need. This is thanks to local subdivision; don't look for a button with that name in Zbrush because there isn't one,

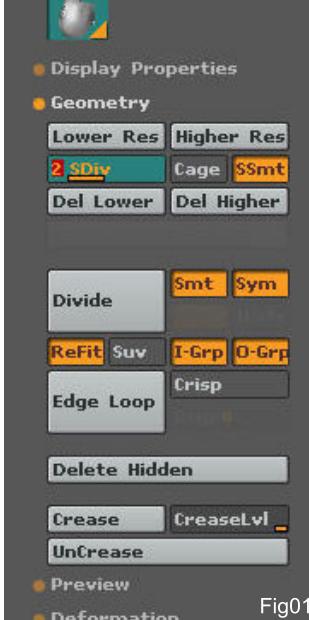


Fig01

although the workflow is as easy as falling off a log. I'll be using a simple base mesh I knocked up a little while ago in Silo 1.4 that hasn't been detailed as yet in Zbrush. We're going to assume we've reached out polygon limit at lets say for the sake of argument 'Level 6', and our machine is screaming as it can't support the next SubD level we need so desperately. Here are the steps we follow to increase the detail just where we need it and not all over the model. (Fig 01). This is our model that we've taken back down to the lowest subdivision level. (I used the 'smooth shader' trick to make this model look a lot smoother than it really is.) We then mask JUST the areas that we need to add detail to and then invert their mask. For this we can either Ctrl + Left click on an empty part of the canvas or use the 'invert' option in the masking section of the tools menus. Both ways do exactly the same job, so use what you find easiest to you.

(Fig 03). Here we masked part of the legs and then inverted the mask. These areas are now the only areas left unmasked. The reason for masking then inverting that mask is really simple. From a workflow and speed perspective it's much easier to mask what we're going to subdivide, then invert, than try and paint a mask over all the model and miss out what we need. Doing it the long way like that, if you only needed for example to do a local subdivision on the lower eyelid area would really slow you down and ruin your flow as an artist. Now for the magic part! Ok so it's not magic, but it did make a more dynamic start to this section didn't it? All we do now is press the 'Divide' Button and abracadabra we've got a locally subdivided mesh with our upper subdivisions intact. Occasionally you may need to run a smooth brush over the area, but it will allow you to get exactly the polygon increase you need, without having to divide the whole model. (Fig 04) Here you can see the poly grouped locally subdivided legs (everything masked was left undivided) your subD levels will still be active. Take care to only try and locally subdivide your mesh at the lowest SubD level. Remember as well that the more polygons that you select, the more it will result in on your final (in our example level 6) sub D level. Also it's worth bearing in mind your mathematics if you already know what your highest useable polygon count is on your machine. Each subdivision increases your polygon count by x 4. (The polygon count of a 2000 poly model when subdivided once would become 8000)

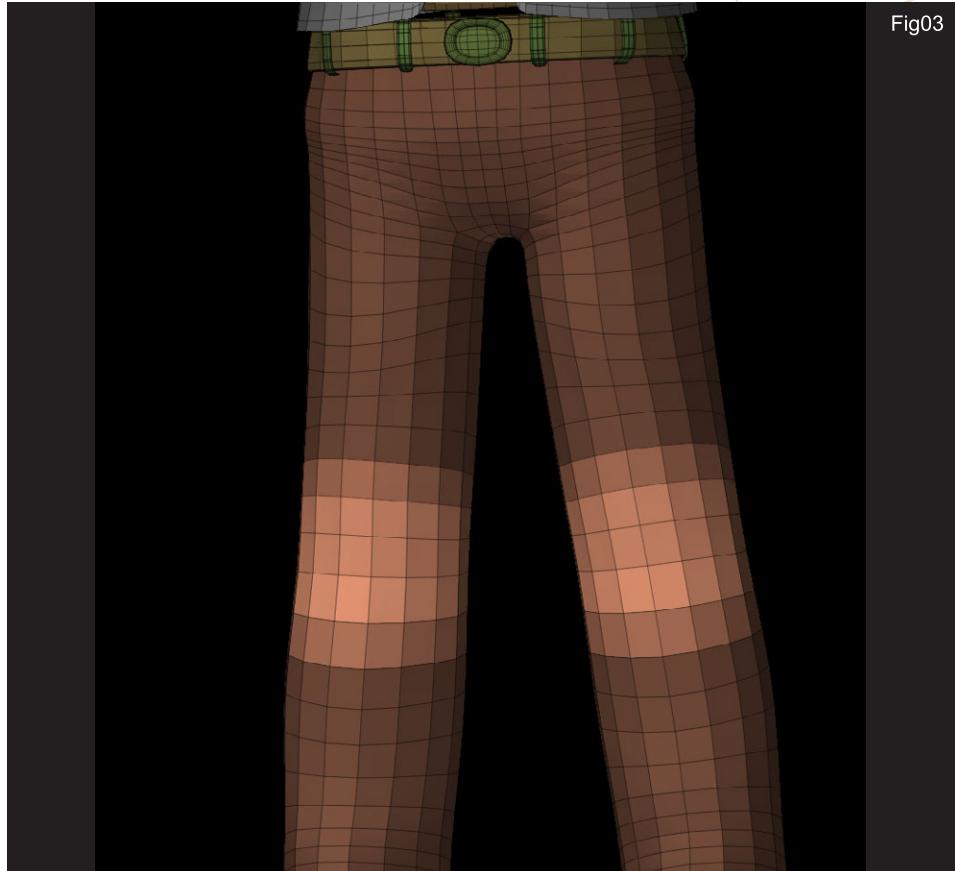


Fig03

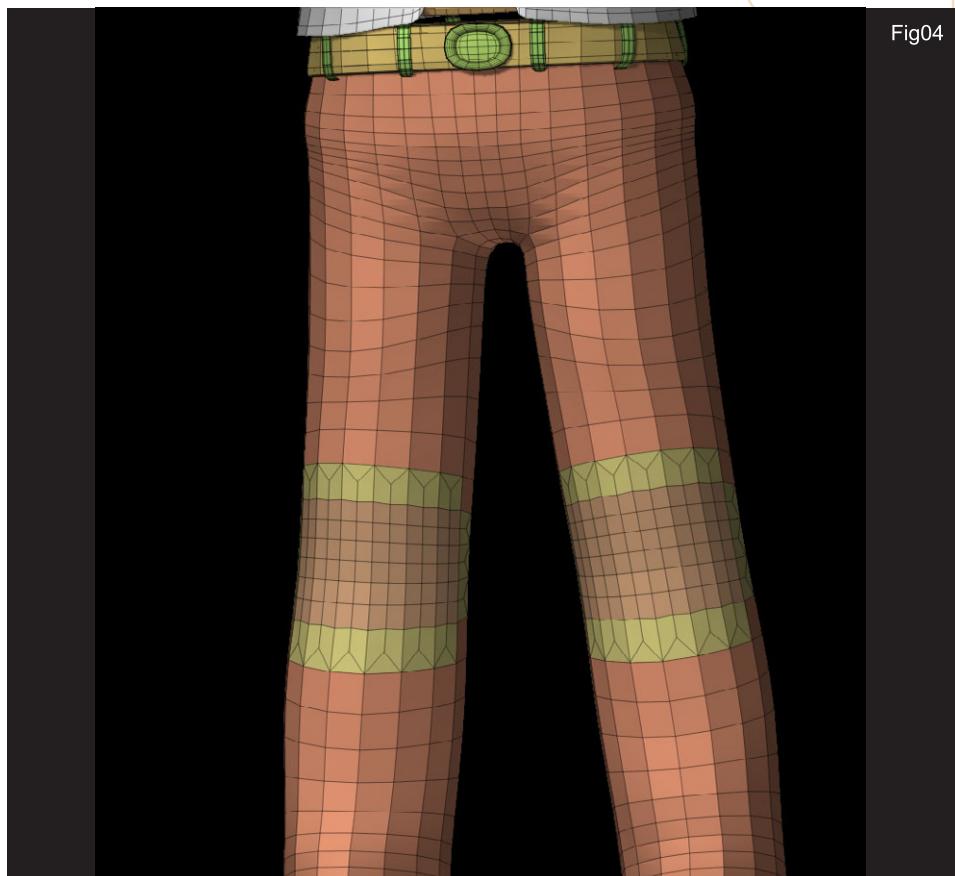
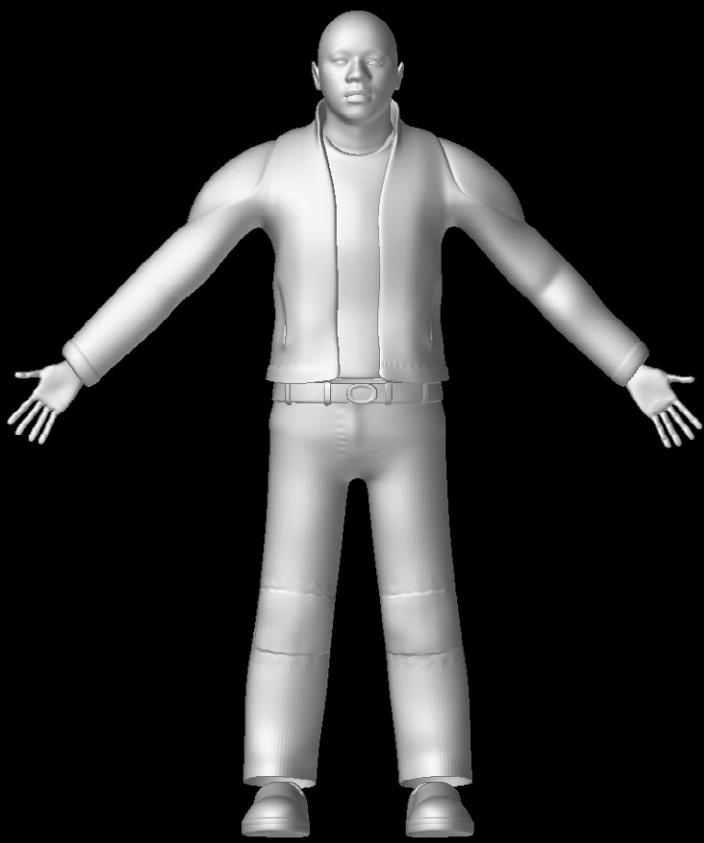


Fig04

## ZBrush Tips & Tricks Top Secret

Fig05



(Fig 05) After a little use of the simple brush we've managed to get enough extra geometry to give him some knee pads. Now you can win friends and influence people with your new local subdivision Zbrush skills! Mesh Extraction Version 1 (The quick and dirty way). So what is 'Mesh Extraction?' Mesh Extraction is simply taking part of your mesh and making it into a totally separate model. This means it can have its own UV set, texture and even been tweaked on its own without disturbing the rest of the model. It's really useful as there are many times when doing something like clothes or armour for a body model that maybe a certain area needs a few vertex tweaks that would otherwise ruin the rest of the model if it was still part of the same mesh. Basically it's a good idea to keep things like armour and clothes as separate meshes as it means you can model these separately and get higher detail than you already would. Here we go... There are two ways that I use to extract part of a mesh. Firstly we'll cover the quick and dirty way, followed by a more controllable

way using a plug-in a friend of mine called E-Z wrote. This is harder to explain in words than to actually do it, so bear this in mind when reading the workflow to the quick and dirty way. First of all I'm going to use a very old anatomy box model I have lying around (hence why the head is incomplete), it'll do to show you how this works. (Fig 06). My faithful friend, my old unused anatomy base. What we're going to do with the quick and dirty version is similar to the local subdivision tutorial above. Firstly we're going to make this guy some clothes so he's not so naked. (After all we can't leave him with his vertex's showing can we? LOL). Let's start with a T-shirt / vest / armour as it will best show what I'm doing without getting too complex. First we mask off the area that we are going to extract. You want to do this with this version at your lowest subdivision level and make sure you have only the polygons you need masked. If you miss out on a polygon at this stage later when you subdivide it, it'll have a ragged edge and look not as clean as you'll need. (Fig 07)

Fig06

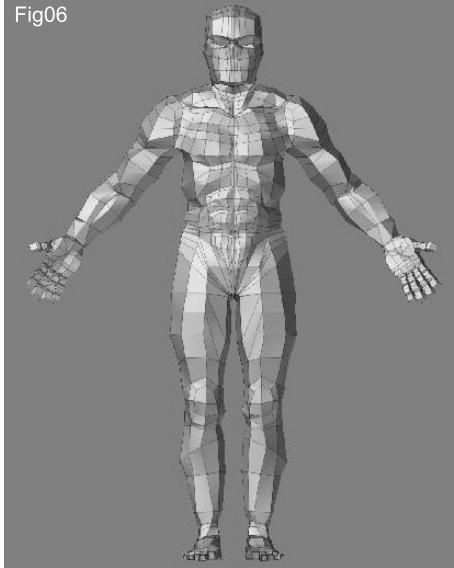


Fig 07 Painted Mask

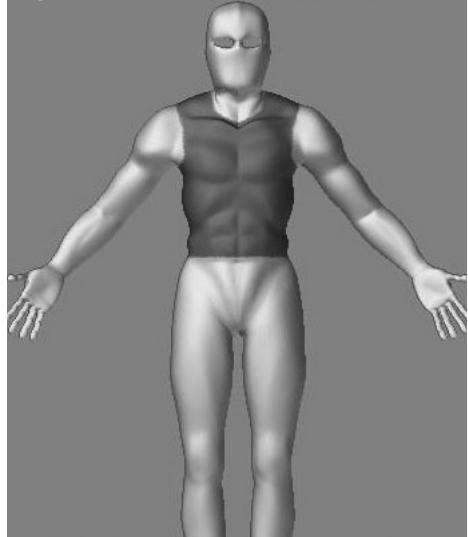
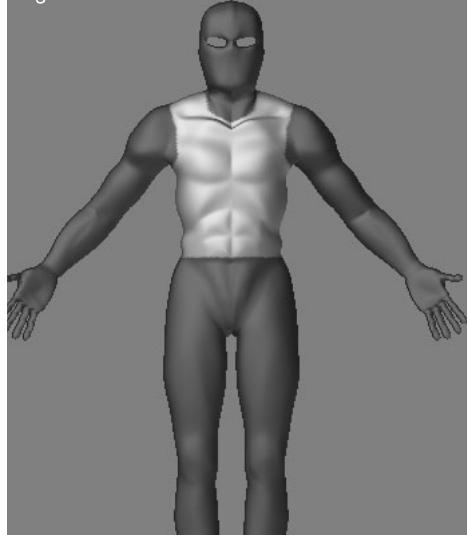


Fig 07 Inverted Mask



## PAINTED MASK FOR THE T-SHIRT / VEST

The workflow now gets very simple indeed. Simply go to your tool menu and look under the 'masking' section. Hit the 'hide unmasked' button. Simply now go up to your 'Geometry' Section and hit the 'Delete Hidden' button. We now have a set of polygons we can do stuff with. If I have a low-ish poly base like in the model I'm using I'll often subdivide it once first, and then delete the lowest subdivision. This means I'll have enough geometry to paint a good mask. This depends on the polygon count and construction of your model. Store a morph target for this extracted mesh over in the 'Morph' section. (This is important! Don't by pass it or you'll regret it later.) We now need to give the t-shirt a bit of thickness to make it look like something other than paper. Go over to the deformations menu and inflate the mask a small amount. This is going to be the thickness we want our vest / t-shirt / armour to be. We can now create a difference mesh by hitting the 'diff' button in our morph section. (This created a mesh that is the difference between the stored morph target and the current inflated size.) This will create a new mesh in your tools to draw to the canvas. You can now start working on your extracted model for real. I'm sure you can do this bit on your own... I would advise maybe trying on some models making a backup of your original file until you get used to the workflow of this. (Fig 08).



Fig08

## MESH EXTRACTION VERSION 2

(E-Z Extruder Plug-in)

A friend of mine has spent a while writing a plug-in that basically automates most of the previous workflow for you, its pretty easy to use and gives you some nice crisp edges to work with. I'd like to say a quick thanks to E-Z for letting me pass on about this wonderful plug-in of his. I feel it would be remiss of me not to mention it when talking about mesh extraction so here's a quick overview. (As more detailed tutorials do come with the plug-in itself.). The way the EZ extruder works is to allow you to paint a mask onto your mesh for the part you wish to extract; you extrude it the amount that you wish and make sure all edges are nice and crisp and clean; then it's a simple matter of using his nice partner morph difference script included with it and you have one nice extruded mesh. The script itself can be found over at [highend3d.com](http://highend3d.com) and has a clear tutorial E-Z has written for it.

## MASK MAPS

Masking an area so that it's locked while you use the add, subtract or smooth brushes (or combination of them) is a pretty standard technique. I invented a variation on it that makes this easier to control for those fine lines and details using a 'Mask Map'. Often once you've blocked out your form of your model in Zbrush it can save a lot of time if you use standard masking techniques and subtract areas that you need to take away. To get a better idea of this type of masking make sure that you take a look at the 'Cesar Dacol's Artists in action video' over at Pixologic site as it covers basic masking very well. Mask maps can be used to make this process easier but also for much finer work. A plus point is that if you have a pipeline for a series of models that have a very similar or identical UV layout you can use the same mask maps on all the models. This can save you one hell of a lot of time if your back is up against the wall. A Mask Map can be as detailed or basic as you like, and does not need to be painted to accurately Fig 09.

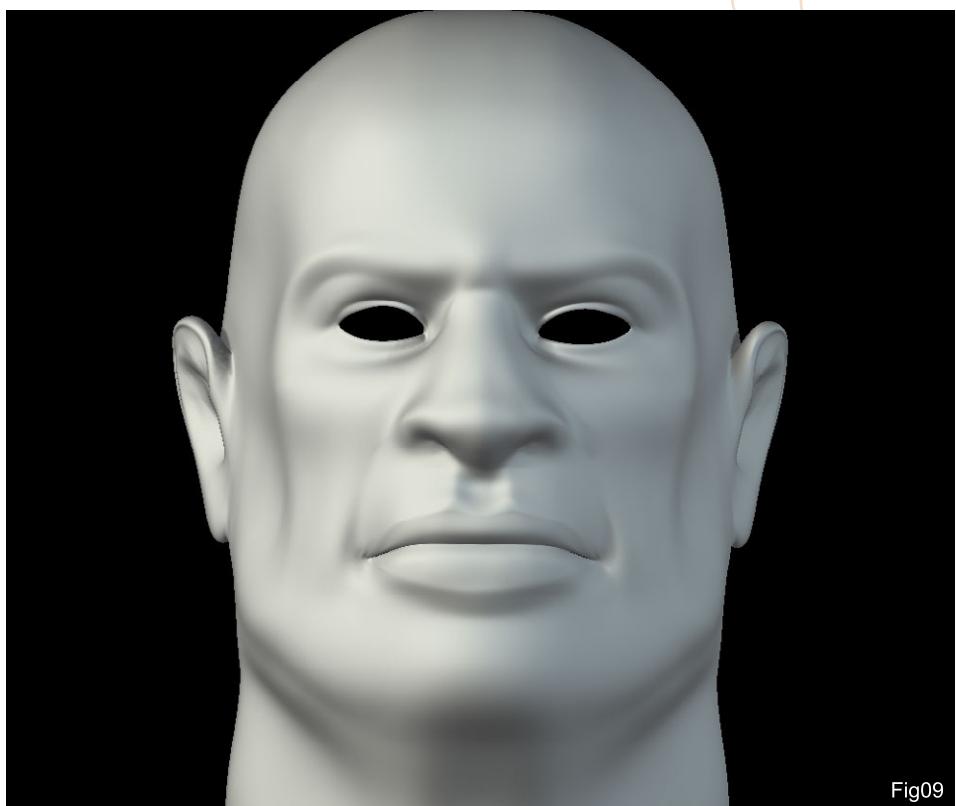


Fig09

## ZBrush Tips & Tricks Top Secret

Using a mask at lower subdivisions and once modelled using your mask, smoothing out before dividing, can produce some really smooth looking form changes. Another way of using masks is to use the intensity of colour map and use that to create a detailed mask from photo textures. Then detail can be added or taken away using this mask. I find this technique does have its limitations though as it is highly dependant on the colour map (or skin texture if your doing a human head) and doesn't respond well to darker or ethnic skin. This was the reason why I invented mask maps about a year back. Mask maps produce in my opinion better results, faster and are much easier to control than other methods. Normally I use a mask map in conjunction with normal mask techniques, (These would be done in lower subdivisions only, then the mask map technique applied.) (Fig 10). So what is a 'Mask map'? It's a very simple concept and one that you should be able to catch onto really easily. A Mask Map is simply a black and white texture map with areas you wish to be masked painted on it. To demonstrate this technique I'll use a rather simplified version to illustrate the theory and practice behind it. I find it makes life much easier to have well laid out UV's before I use this technique. Well laid out UV's aren't essential, but if you like me you may want to work a fair bit at some point in Photoshop in 2D its worth the effort of laying out some good UV's. (Fig 11). Above you can see the final 'mask map' in all its basic glory. It doesn't look like much and indeed in this case it isn't a lot of work. All I've done is to make sure I had a blank texture on my model that is white and paint black on my model in Zbrush the parts I wish to add some detail using a mask. In this case it's some work around the eye's and nose area on a model I'm working on at the moment. What you do on our own model is obviously up to you. Often I'll spend a while painting not just one but several mask maps of varying detail so I can keep the amount I am adding or taking away on

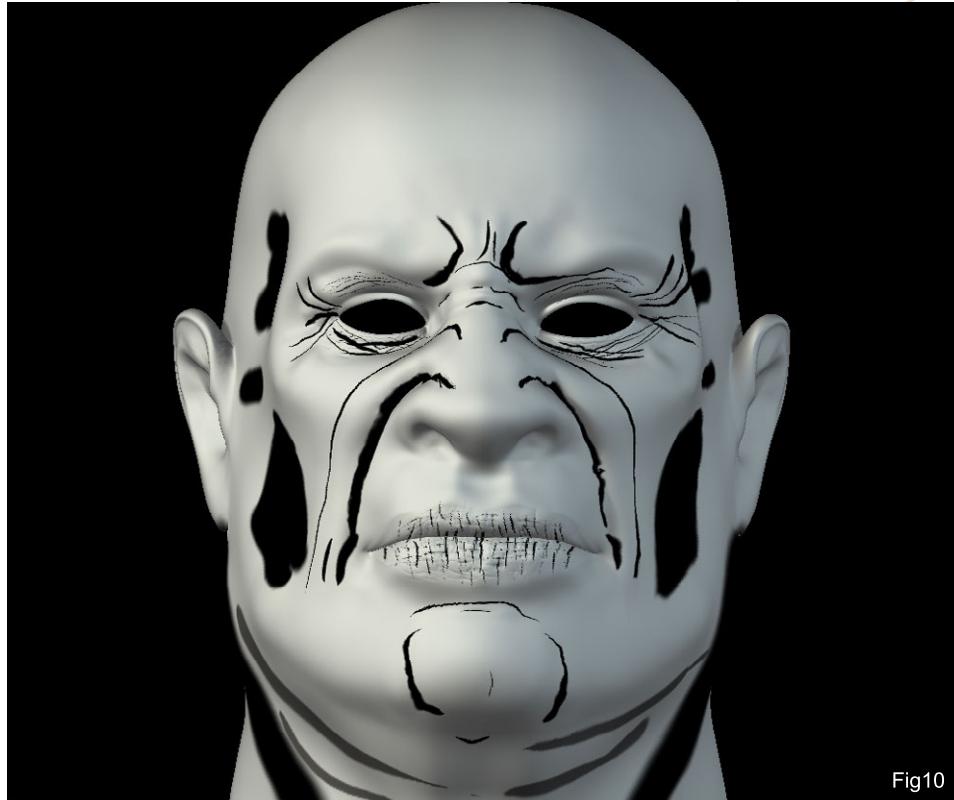


Fig10



Fig11



Fig12



Fig 13 Mask from Mask Map Texture



Fig 14 Inverted Mask

my model separate and different to each other for each level of detail. (Fig 12). I treat detail in layers, that is to say I will add the main forms, then medium detail and finally a number of high frequency detail layers. These high frequency layers may include a fine wrinkles layer, a skin pores layer, any blemishes I wish to add etc. My workflow for these sorts of details, especially wrinkles is to first make sure I have my mask map on my model. I'll then go in my tool pallet down to the mask section and first hit the 'int' button (this masks the model using the colour maps intensity), and then invert the mask. (Fig 13 & 14). I will then take my subtract brush and take away the inside of the wrinkle. Sometimes depending on the results I've gotten from this, I may also run a smooth brush over the edges that are at the very edge of the masked area.

## ZBrush Tips & Tricks Top Secret

Then I invert the mask again and smooth the outside. Often I get good results by also using an inflate brush lightly around the edges of the masked area. The technique is simply a matter of using the right amount of add or subtract to each mask and inverting and continuing. As your mask map is already painted, you can get a lot of detail done in a short amount of time. (Fig 15). Try this when you're confident with this method. Split your detail into 3 separate mask maps each with a different type of level of detail. Use different brush sizes and settings for each and you'll notice how much more control you have now and how easy it is to add exactly what detail you need. Bear in mind sometimes you may paint a mask map and later realise that you don't actually need everything you've painted. Don't use everything on the mask map just because it's there! A word of caution as well, remember that sometimes it is much more effective to have a small amount of very high frequency detail than to cover your model with ultra / uber detailing smothering your model. Just because you can add very high frequency detail doesn't mean you should. (The model you see below is by no means finished obviously, as I'll be adding some high frequency detailing etc.) (Fig 16). I hope these tips / secrets have in some way made your modelling experience a little more enjoyable and gave you some great new ideas to fit them into your workflow or pipeline.

### WAYNE A. ROBSON

For more work from this artist please visit  
<http://www.dashdotslash.net> or contact  
wayne@dashdotslash.net

Fig15

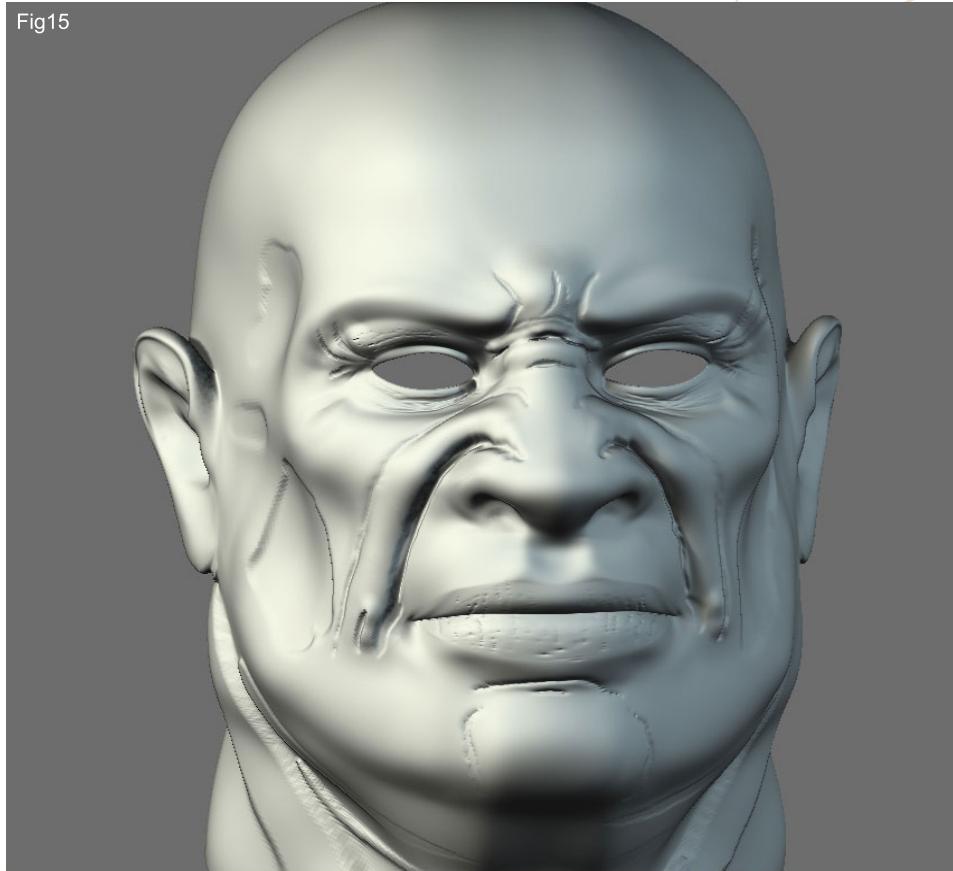
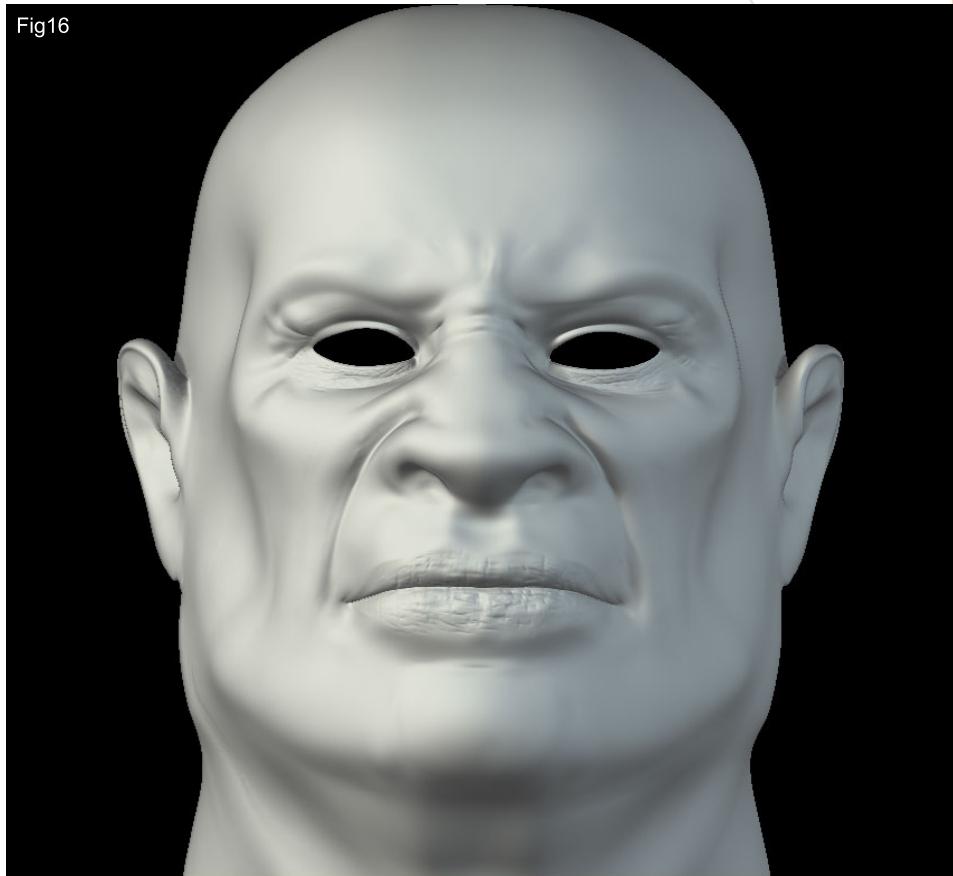


Fig16



**Pixologic**  
makers of **ZBRUSH**

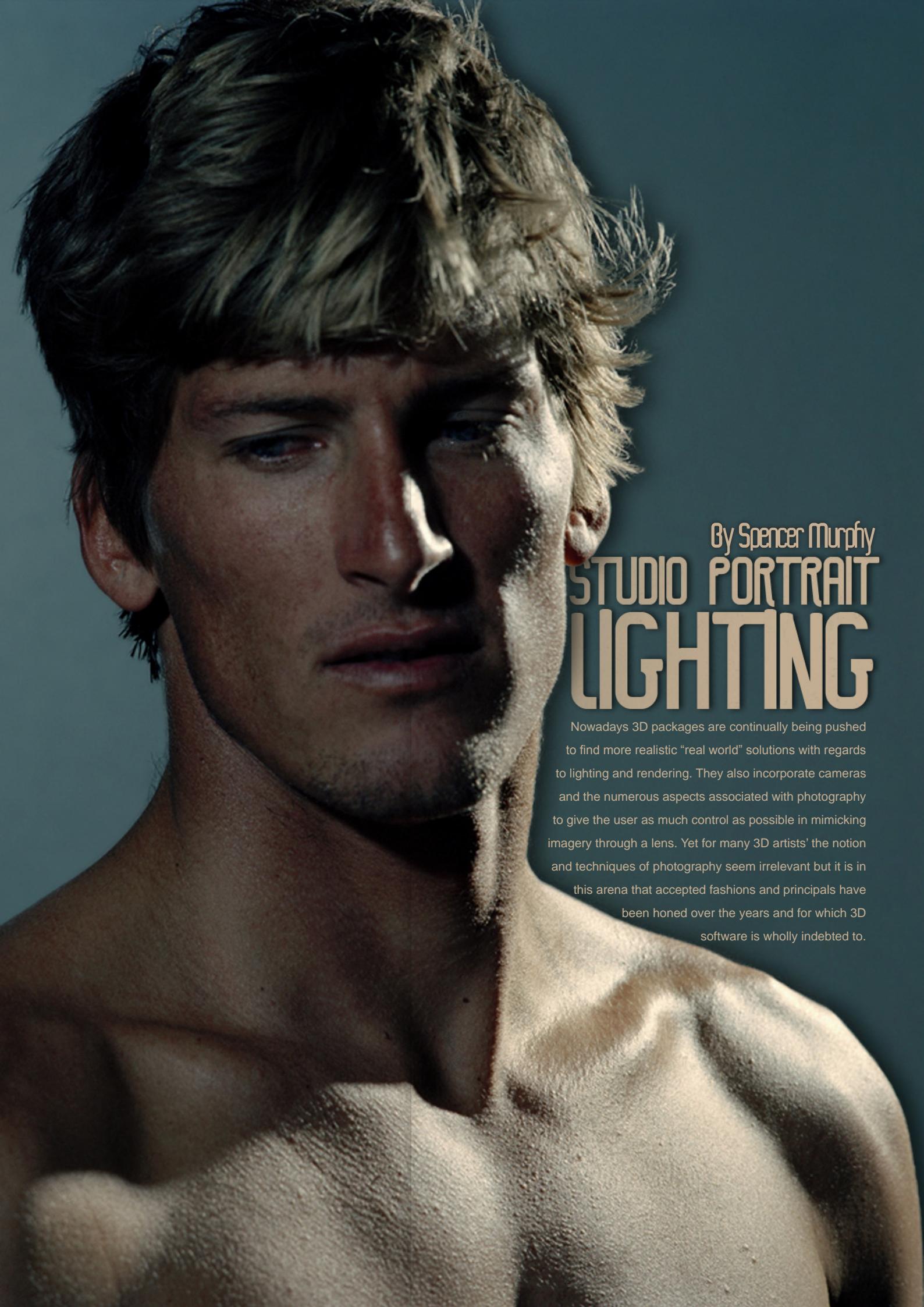


[ZBrush.com](http://ZBrush.com) [ZBrushCentral.com](http://ZBrushCentral.com)

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"ZBrush has initiated a renaissance on sculpture. It's the first and only sculpting software that gives the artist freedom to work creatively without the constraints of conventional modeling packages also eliminates the need to work with physically based maquettes because it is, better than clay, more intuitive to use, and far more productive."  
- Geoff Cambell, ILM Senior Model Supervisor



By Spencer Murphy

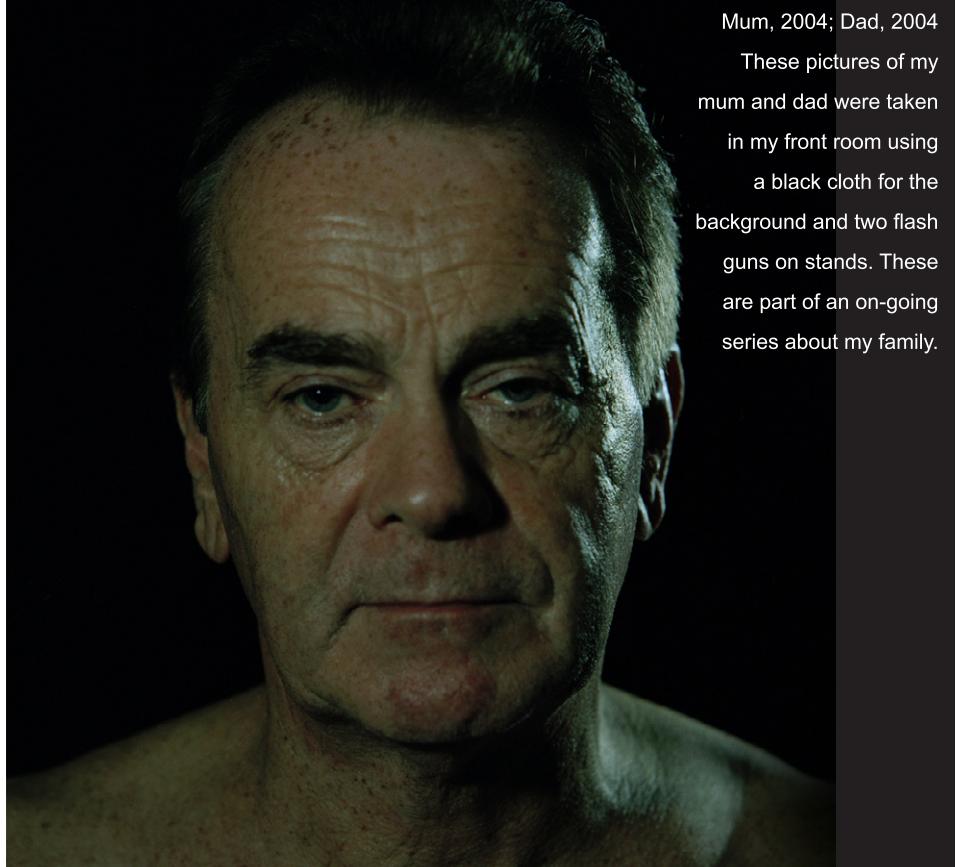
# STUDIO PORTRAIT LIGHTING

Nowadays 3D packages are continually being pushed to find more realistic "real world" solutions with regards to lighting and rendering. They also incorporate cameras and the numerous aspects associated with photography to give the user as much control as possible in mimicking imagery through a lens. Yet for many 3D artists' the notion and techniques of photography seem irrelevant but it is in this arena that accepted fashions and principals have been honed over the years and for which 3D software is wholly indebted to.



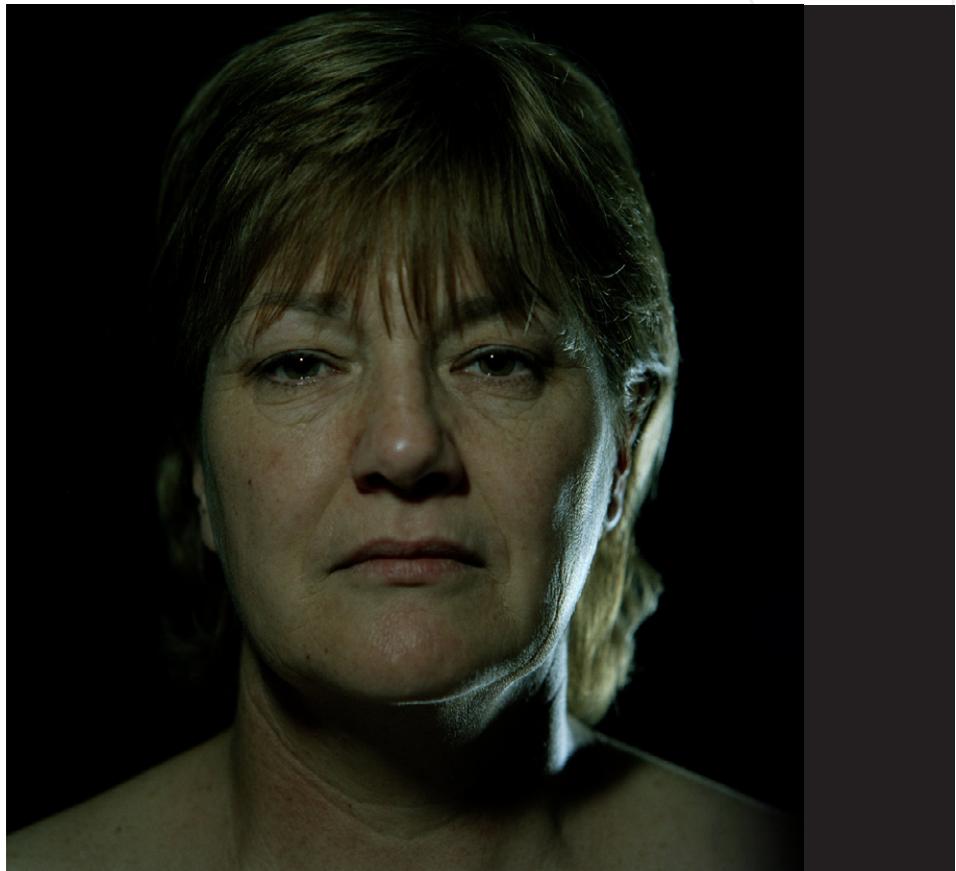
# STUDIO PORTRAIT LIGHTING

Characters are a prolific subject for many working within the industry and being able to properly light and render a model is a crucial ingredient in how they are portrayed. As a result we are pleased to include an article by Spencer Murphy on some of the techniques related to studio lighting and the various methods used. These may be viably translated into a 3D scenario and help create the mood and quality necessary to compliment a character model and improve the final render. There are many different ways to achieve the lighting that you want in a studio situation. To avoid confusion, I'm going to use one example in this tutorial, but this can be adapted by adding more lights, taking away lights and moving them into different positions. The key to creating a good studio portrait is understanding light and this is the main area that I will cover in this tutorial. You should think about where you want to place your lights in order to create the desired effect. Moving a light closer to the subject will make it brighter and further away will make it darker. You can soften a light by putting 'diffusion' on it, or by adding highlights by focusing the light onto a certain area. I tend to use studio flash but the same theory can be applied to constant light sources and even by using daylight through windows - you just need to consider the relationship of the light source to your subject.



Mum, 2004; Dad, 2004

These pictures of my mum and dad were taken in my front room using a black cloth for the background and two flash guns on stands. These are part of an on-going series about my family.





## Studio Portrait Lighting Tutorial

### STEP ONE: WORK OUT POSITIONS

Choose a suitable wall or hang a backdrop. If you want to use the features of a room, this will work just as well. Get your model, or someone else, to stand in front of your camera (which will ideally be on a tripod). The distance they are from the background will determine how much light and shadow will fall on it. Roughly frame up on them and then mark off the position of their feet with some tape on the floor. This will be your mark to set your lighting to. Now they can relax while you set up your lights.

### STEP TWO: LIGHTING

To achieve the lighting shown in these examples you will need two light sources, preferably flash. If you have a light meter this will then make the balance of your highlight and main light more accurate and easier to achieve. Next to the camera, facing the subject, you should place your main light. This should be softened using 'trace' (available in professional photography shops) If you can't find trace you can use a see through material, or some tracing paper (if you are not using flash be careful not to catch anything on fire). The main light should be up high on a stand, roughly 8 feet or more, and facing down towards the face of your subject. To check this, go and stand on your mark to see if the light points towards your face, but remember to adjust this if your subject is taller or shorter than yourself. For the highlight, set up a light on a stand behind and to one side of the subject.

To achieve a hard light it is best to use a 'Snoot' or a 'Honeycomb' (See images), which will focus your highlight on the edge of the face. Again if you do not have access to these accessories you can fashion a tube to fit your light out of black card and this will have the same effect. When you do this try to imagine the path of the light. This light should be at roughly the same height as your main light and pointing down so that it hits the top of the head and the side of the face. Now you need to balance your light. I use

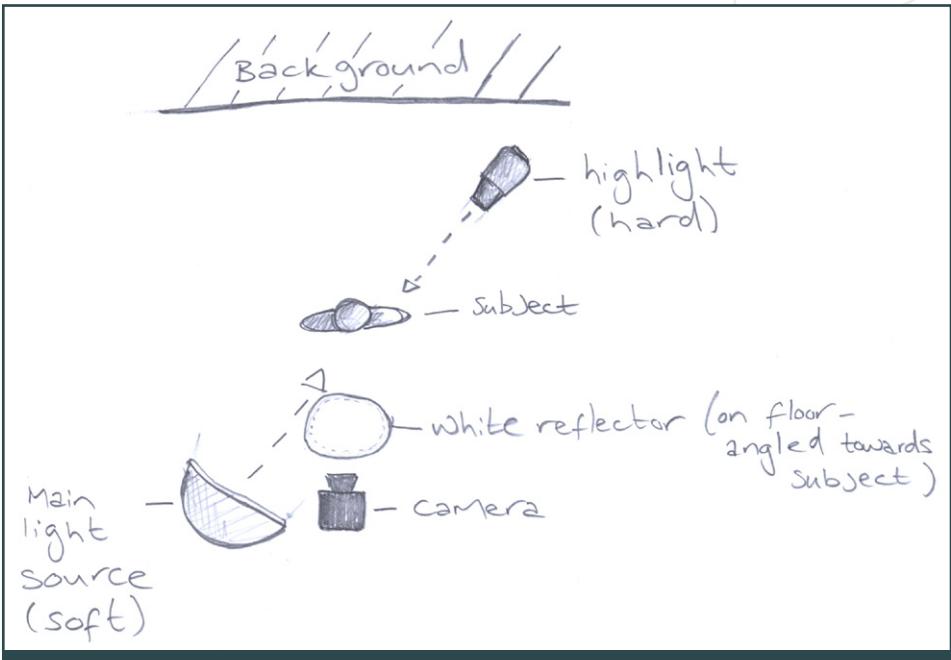
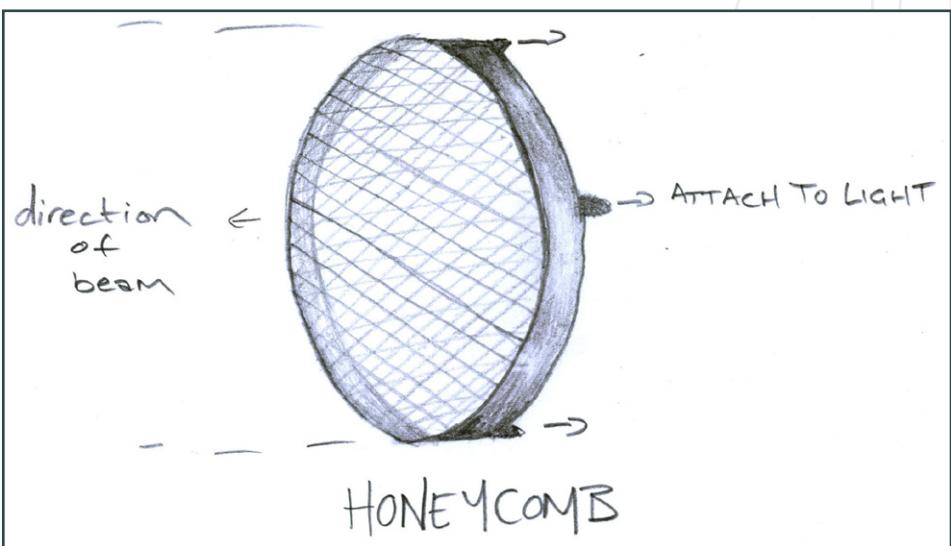
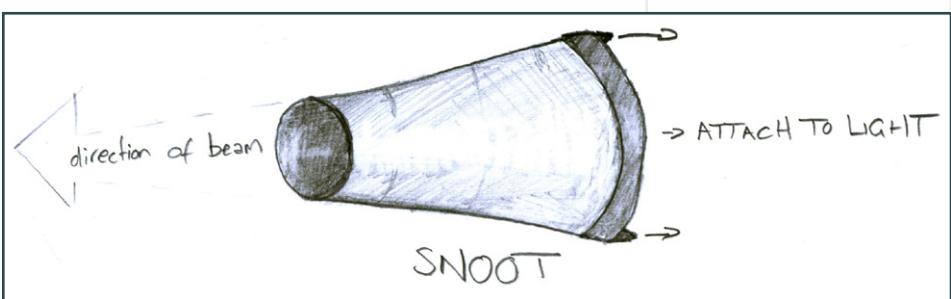


Diagram : This diagram shows the rough positions of lights, reflector, background and camera as described in the text and used to create these examples"



Honeycomb : (Or Grid set) A fitting for lights that uses a hexagonal mesh to focus the light source into a beam. Available in different degrees to give the ability to adjust the spread of light.



Snoot : A cone-shaped shield used on lights to direct a concentrated beam of light over a small area.



## Tutorial Studio Portrait Lighting



Kelly Slater,  
Professional Surfer,  
2004; Bruce Irons.  
Professional Surfer,  
2004 : These  
photographs were  
taken in a small  
porta-cabin at a  
surfing contest in  
Spain, using the  
lighting set-up that I've  
described. I wanted  
to take a different  
picture to those that  
you generally see of  
surfers, and aimed to  
convey the dark and  
lonely feeling of the  
ocean.

a light meter and a Polaroid back to get this right but if you are using a digital camera you can use trial and error until it looks right. If you are using a light meter then your highlight should be roughly half a stop to one stop brighter than your main light source. If not, an easier way of looking at it is that if one light is too bright, then turn it down or move it further away. Do the opposite if it's too dark. To avoid heavy shadows under the nose and chin, a large reflector should be put on the floor and angled towards your subject. For this you can use a purpose brought reflector, such as a 'lastolite', a large piece of white card or a mirror. (See Diagram Image on previous page).

### STEP THREE: TAKING THE PHOTOGRAPH

This is something you can't really teach but will come with experience. Everyone gives direction in their own way. Just make sure you talk to your subject so that they know what feeling you want to achieve. If you can make them feel relaxed and calm then it will help. Try to focus on the eyes and keep horizontal and vertical lines of the body straight in the camera. Please note that these are not strict rules and it all depends on what you are individually trying to achieve. This is just one example of studio lighting for portraiture, which can easily be adapted by removing the highlight and just using the front light, by adding another highlight or soft light on the opposite side or by changing the balance of the lights so that they are even. If you have a picture in your mind, or something you want to copy, think about where the light is coming from and whether it is hard or soft and you'll be a lot closer to achieving what you want.



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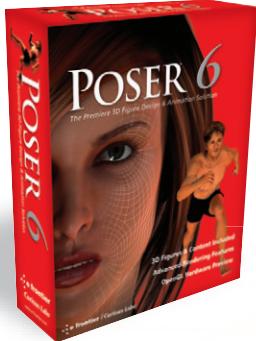
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Welcome to our ongoing tutorial which will provide a step by step guide to building a low poly character based upon a model by Seong-

Wha Jeong. Over eight months we will be covering how to build, map/unwrap and texture the character. This month - Part 7 Texturing the Hair & Skin



3DSMax Version

Page 124



Cinema4D Version

Page 135



Lightwave Version

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Maya Version

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Softimage XSi Version

Page 168





3DCreative have teamed up with 3dtotal.com and design studio press to give you a preview of some fantastic books on offer.

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## OUTPOST

1. DESIGNED BY STEVE JUNG / 2 & 3 DESIGNED BY FARZAD VARAHRAMYAN

This was one of those environments, that lent itself naturally to great lighting and mood. The high contrast between the snow, wood, rock, and scenes of violence made it ideal for legible, strong graphic reads.



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stages of his creation  
'Surfer Dude'. Beginning  
with the initial concept  
stage moving along to  
the final outcome.



Eric Provan



# SURFER DUDE

## CONCEPT

Most of my personal projects start out with a bunch of very rough concept sketches. I quickly focus on what style I want the character to be (Cartoony, Stylized, Realistic, Hyper-Realistic), and I also try and get a feel of what kind of anatomy he/she may have. In this case I knew I wanted a stylized male who was skinny/muscular. After sketching some poses, I felt he would make a great surfer dude. The character was slightly inspired by my father who swears he was one 'bitchin' surfer back in the 70's. I believe him, since he's still a darn good surfer, but I don't think he's as bitchin as this character. (Fig01).

## MODELING

I did all of the base modeling in Maya. Maya is the software that I learned 3D on, and therefore I always feel comfy using it. As with any organic model, my main focus from the very beginning was to make sure that the edge loops were laid out nicely, so that the character deformed well when rigged. The real challenge is figuring out which muscles need to be edge looped and which muscles can be created later in the displacement map. I also tried to keep 3 sided

polygons to a bare minimum. I often use Maya's Smooth Proxy tool to get an idea of what the model looks like at higher subdivisions. I feel that while I still have a lot of room to grow, modeling is my strongest skill. Therefore, I spend a lot of time during the modeling process, so that the model can do a lot of the work in the final render/animation. (Fig02) (Fig03) (Fig04).

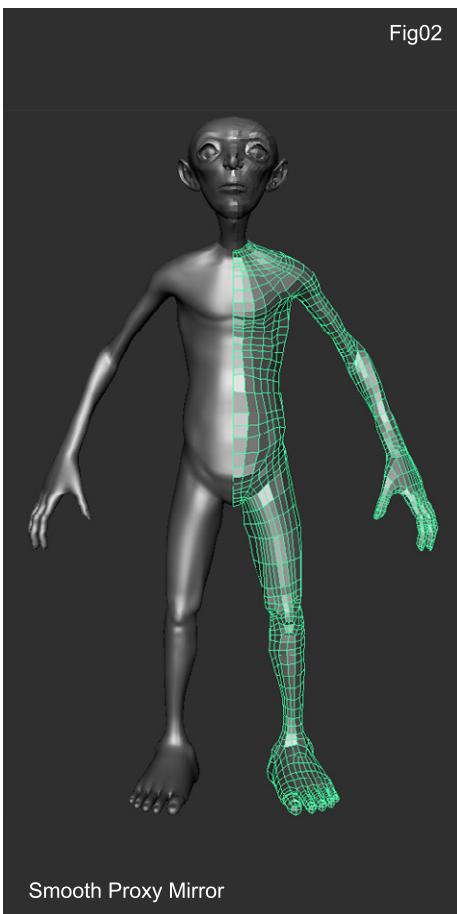
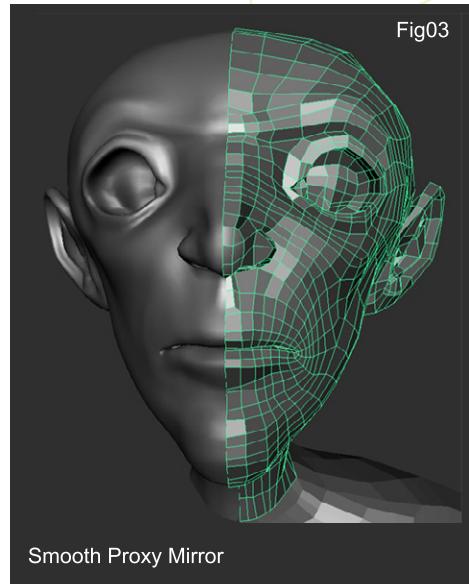


Fig02



Smooth Proxy Mirror

Fig03

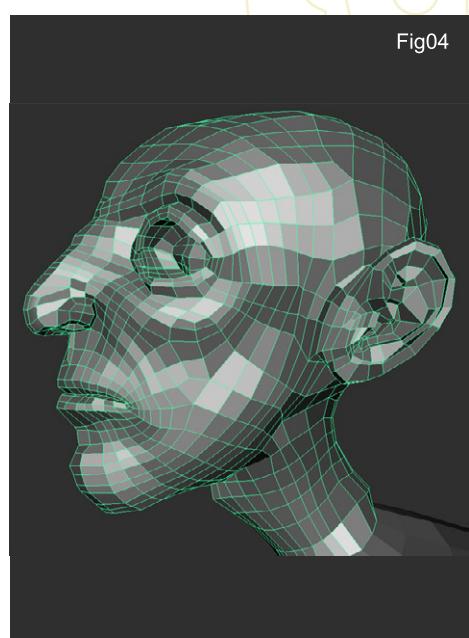


Fig04



Fig01



## RIGGING

Once the edge loops looked nice, and I had a good base, I rigged the character. I've been using a very cool little Maya Plugin called The Setup Machine. It just takes a lot of the headaches out of the rigging process. (Fig05) (Fig06).



Fig05

Fig05

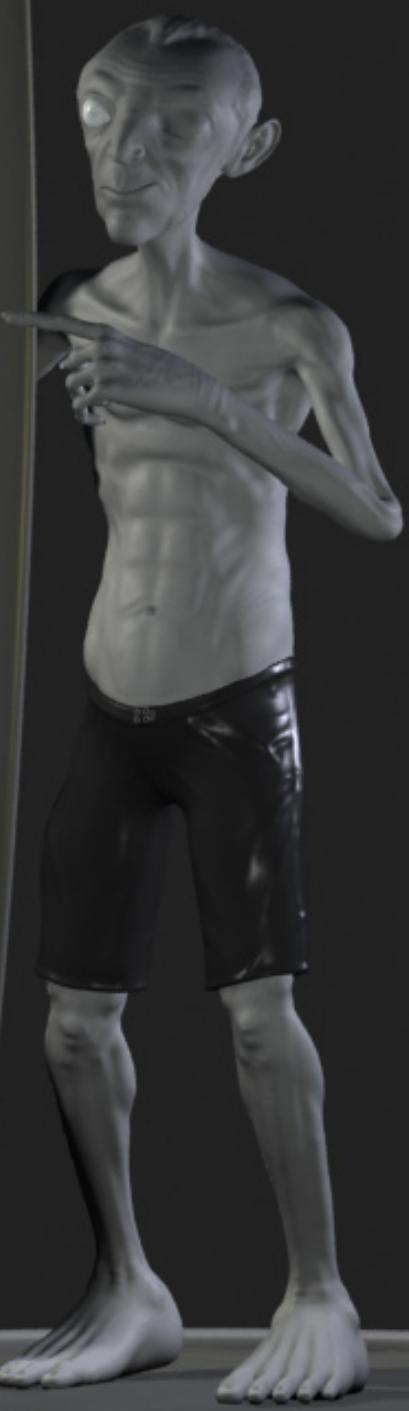
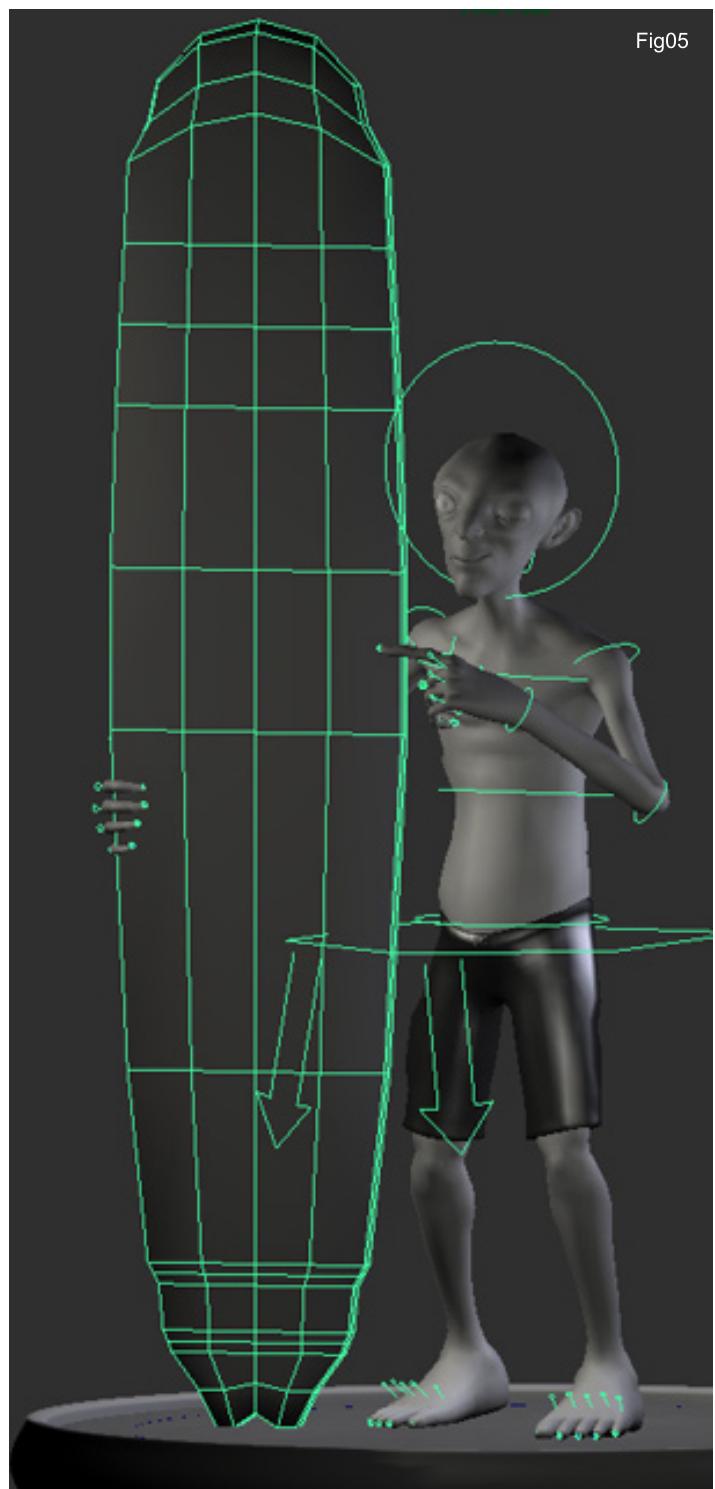
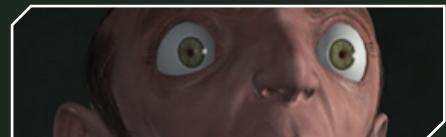


Fig06





## DISPLACEMENT

At this point, I'm ready to put a lot more detail into the model. I exported the Obj's from Maya and import them into Zbrush. As I said before, I really want the model to do a lot of the work in the final renders, so I always spend a lot of time on this step. It also helps that its my favourite step. I could sculpt for days and days. Anyway, I started at a low subdivision and slowly work my way up in detail. The main thing I focused on in the beginning is accurately nailing the larger muscles and more tricky muscles. I always spend a little extra time on the brachioradialis, because it is by far the coolest muscle on the human body and I also sound smart saying it. I have a pretty basic work flow when it comes to sculpting in programs like Zbrush and Mudbox; Push, Pull, and Smooth. Since this was just a personal project and I knew that I would be using Zbrush for the texturing, I used Zbrush's Automatic UV'ing option. While a bit messy, this is a very fast way of laying out your Uv's. At this point, I created the 32 bit Displacement using Zbrush's Multi Displacement tool. (Fig07) (Fig08).



Fig08

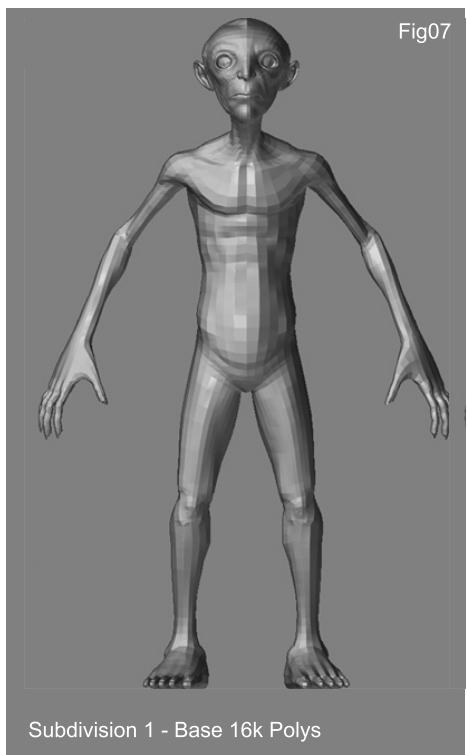


Fig07

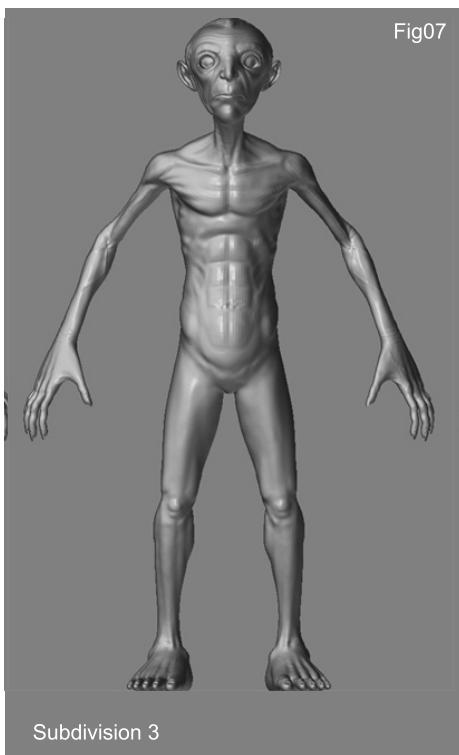


Fig07

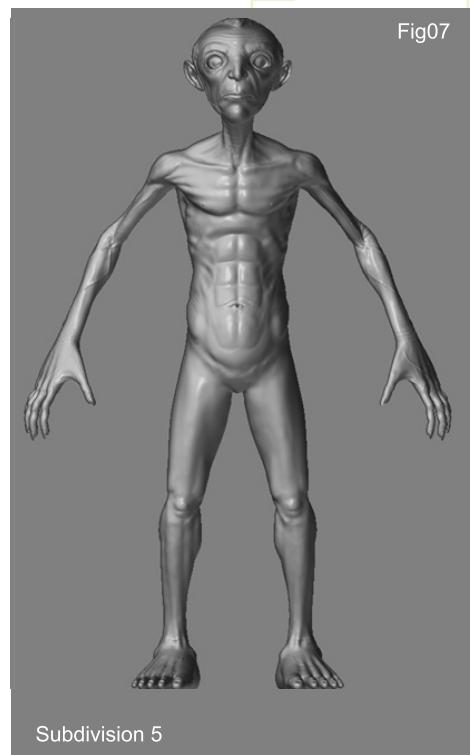


Fig07

Subdivision 1 - Base 16k Polys

Subdivision 3

Subdivision 5



## Surfer Dude The Making Of

### TEXTURING

With the UV's laid out, it was time to move on to the texturing process. For this project, I used a very cool Zbrush tool called Zaplink. Zaplink is a projection tool that lets you switch back and forth from Zbrush to a program like Photoshop. I started with a base skin colour and then slowly worked the skin detail in by using reference from 3ds. The key to using photographed reference is to make sure that you paint out all the specularity. After many trips from Zbrush to Photoshop (enough to make me very dizzy), I exported the colour texture and begin the rendering process. (Fig09).



### RENDERING

I played around with the Renderman for Maya Trial a few months ago and knew immediately that it was the renderer for me. The speed at which it renders displacements is insane. A lot of the renderman options are set in the attribute editor. The first thing I did was set all the objects in the scene to be rendered as Subd's. This is done by selecting the object, going to the attribute editor, and setting the renderman option to subd scheme. I also set the shader node to use sub surface scattering. In the rendering options I turned on Raytracing and also added an environment light for a little global illumination. I also set the Shading Rate down to 1.0 (the lower the better). For the lighting, I used a very simple 3 light set up. (Fig10) (Fig11) (Fig12) (Fig13).

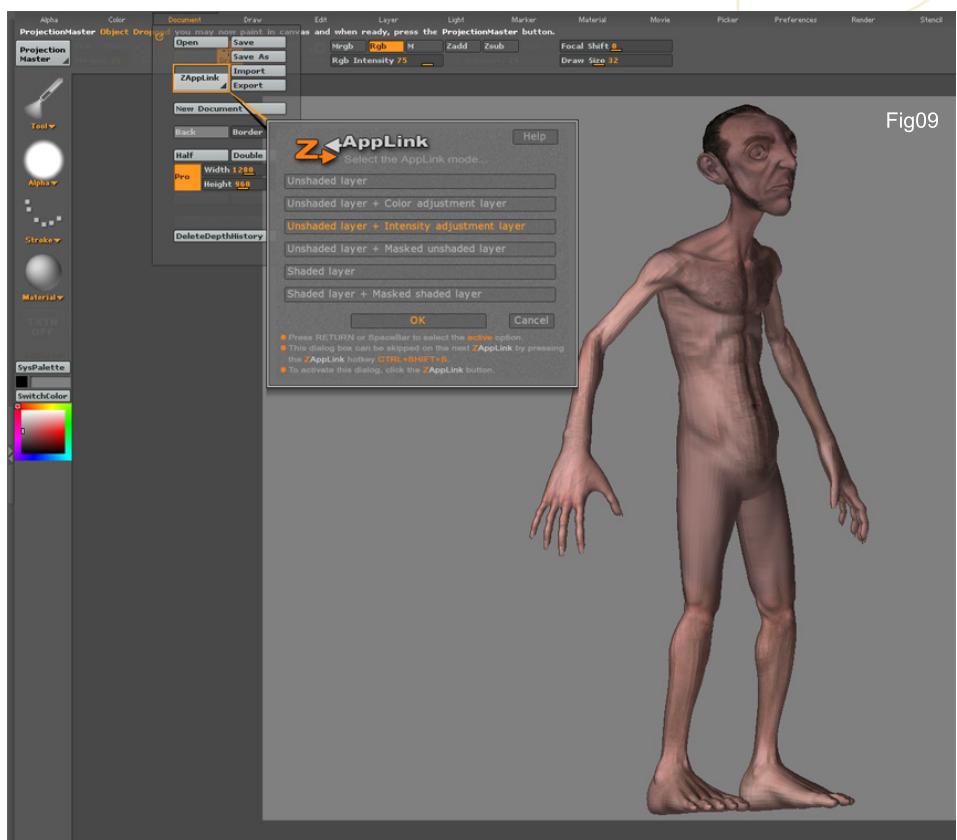


Fig09

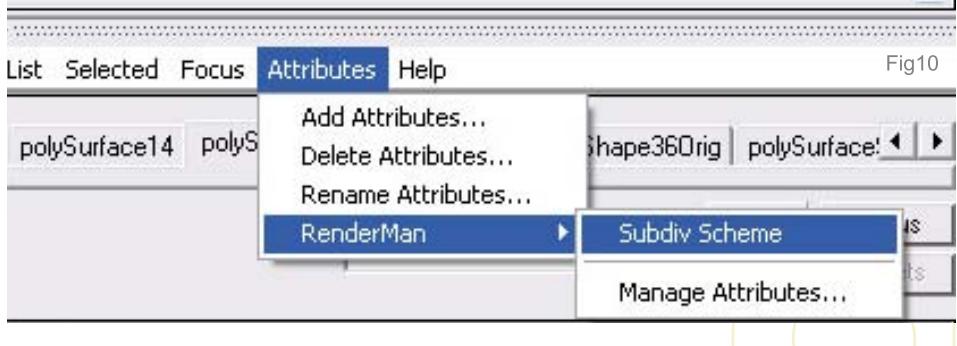


Fig10

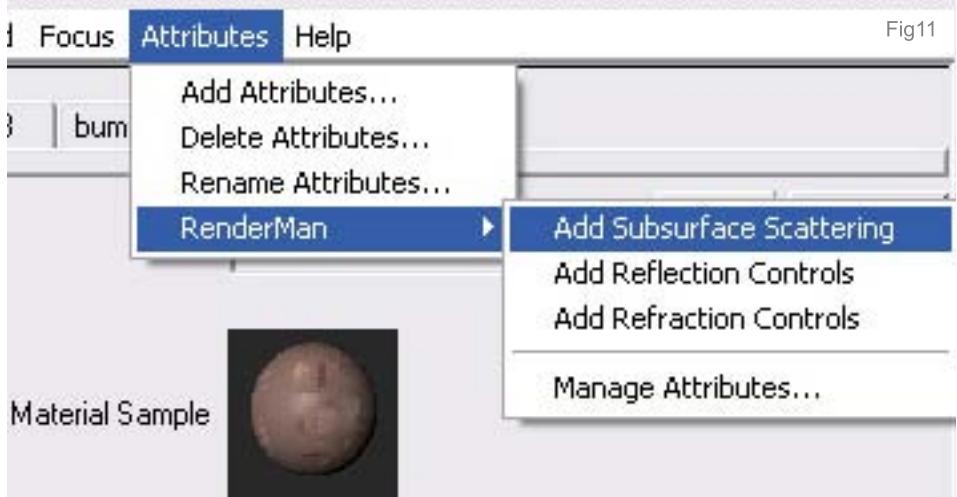
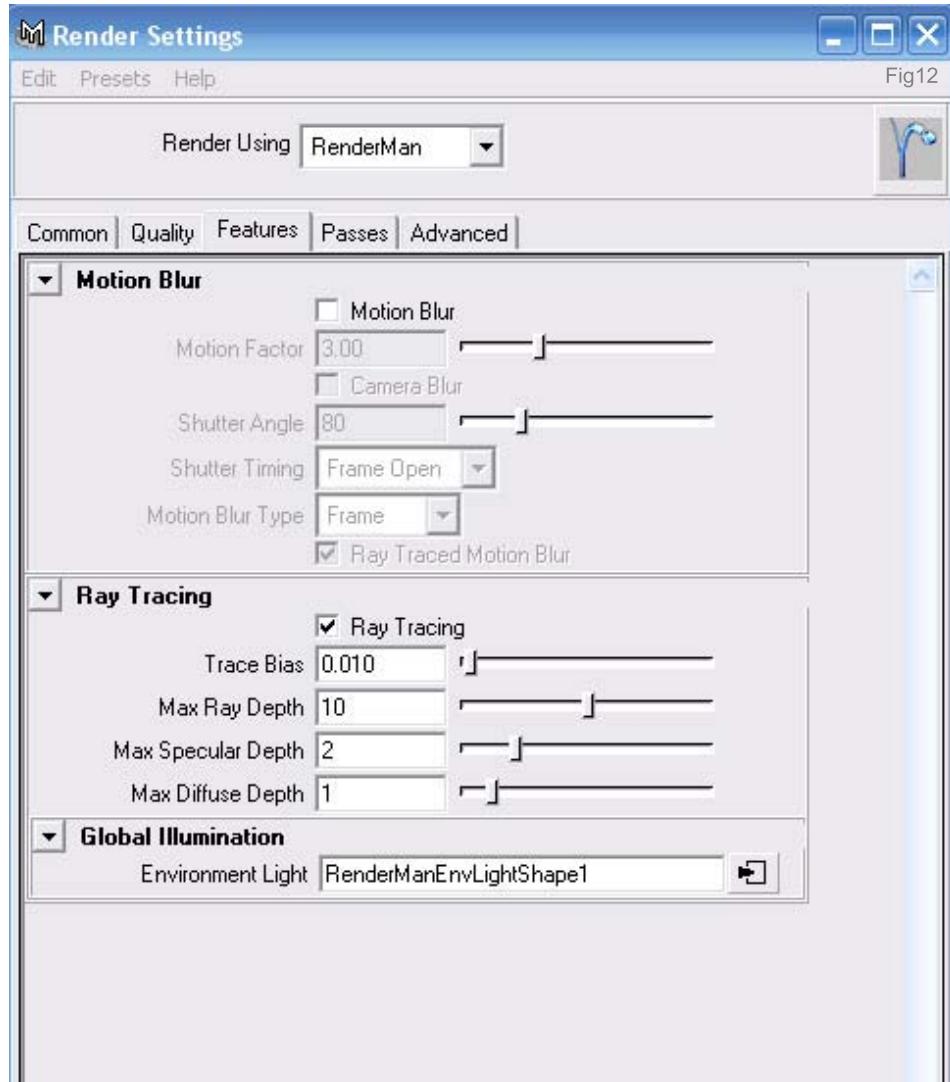


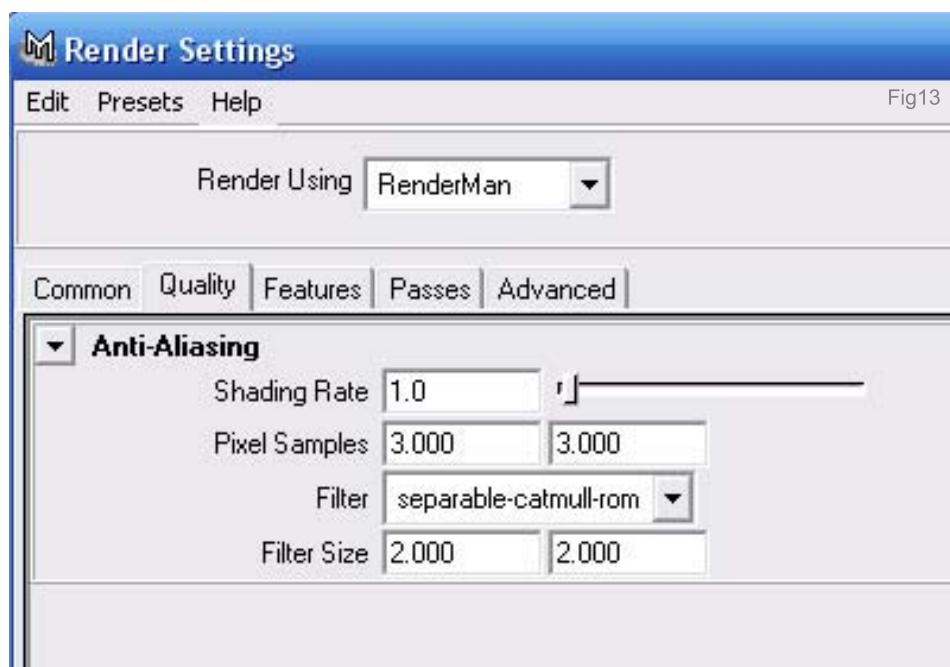
Fig11



## The Making Of Surfer Dude

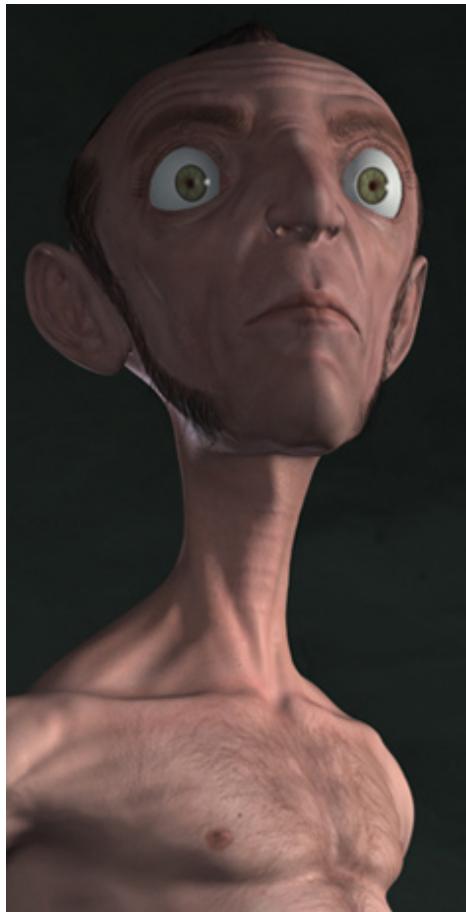
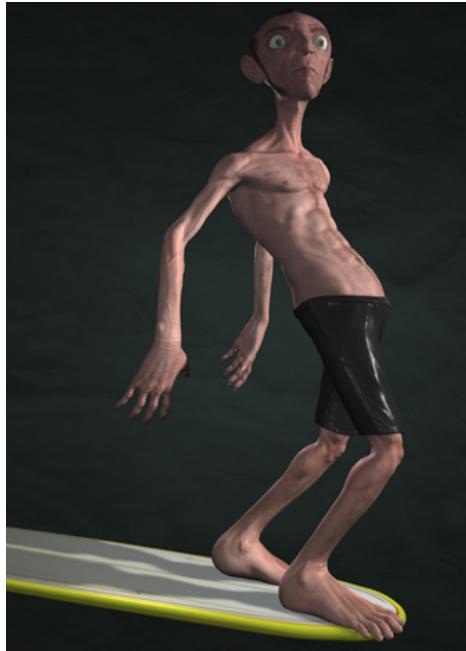


Well, that's about it. I hope you enjoyed this little "Making Of". Please feel free to drop me a line with any questions or feedback. Also, thanks 3Dtotal and Zoo Publishing for this opportunity! Here are some final shots.



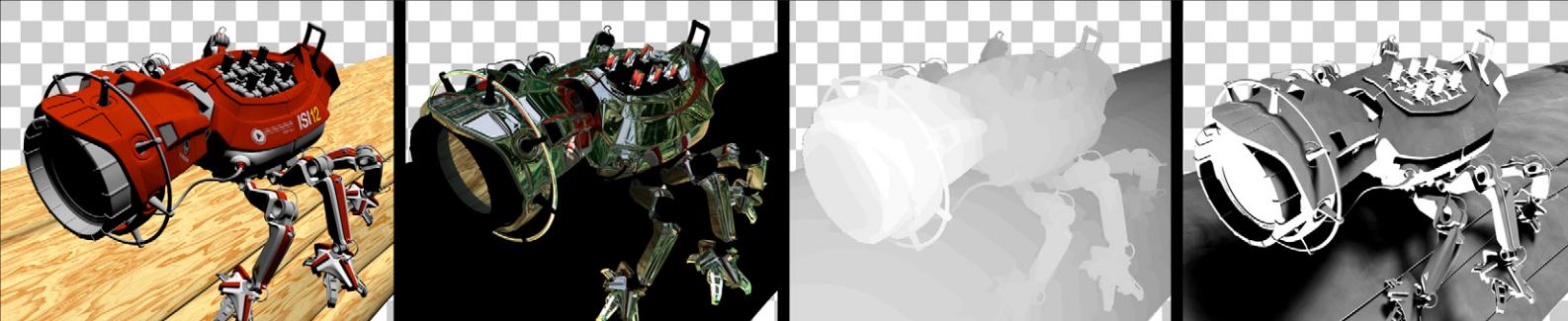


## Surfer Dude The Making Of



### ERIC PROVAN

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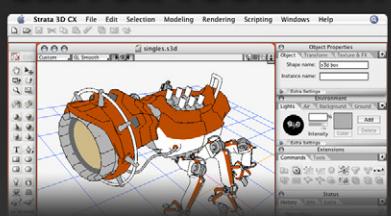
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# bad kitty

In this article I'm going to show you what kind of methods I used for my latest image "Bad kitty". My own cat gave me the inspiration to create this picture, she likes to turn our flat into a mess when we're not home. I used 3ds max 7, Vray 1.09, MentalRay & Photoshop.

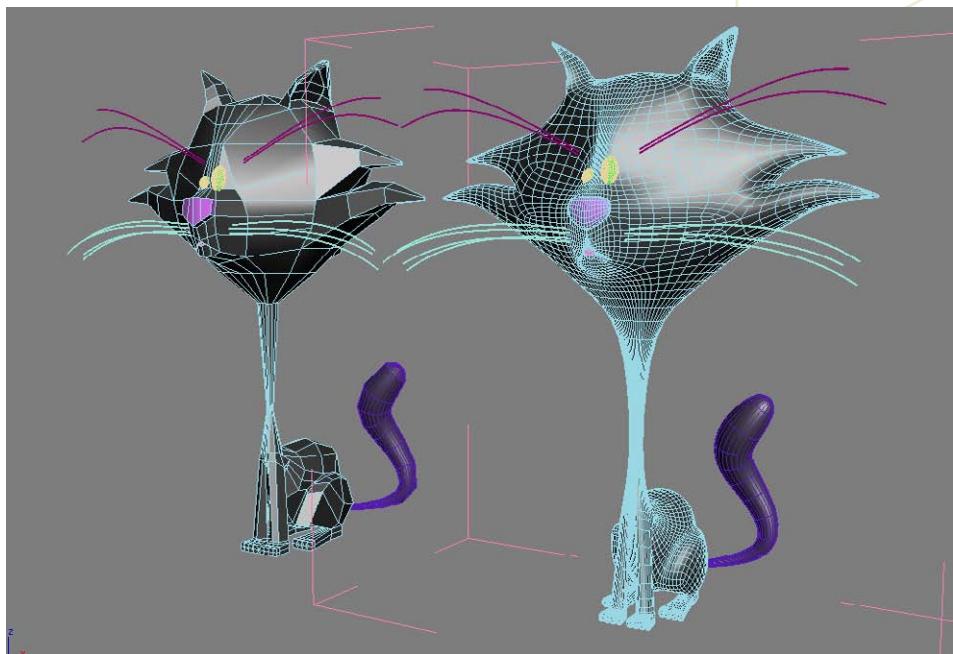
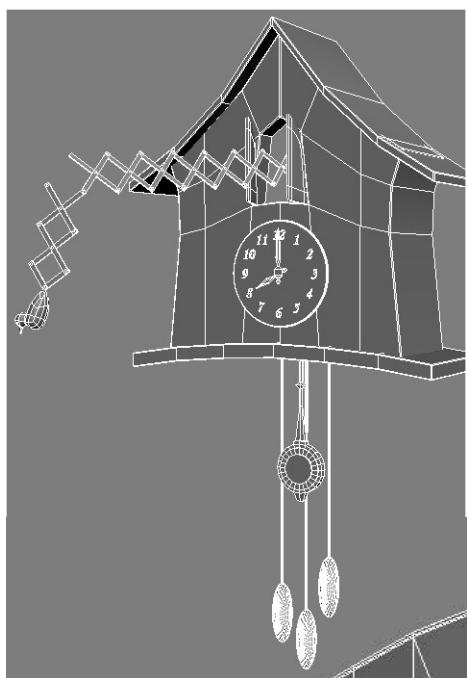




## Bad Kitty The Making Of

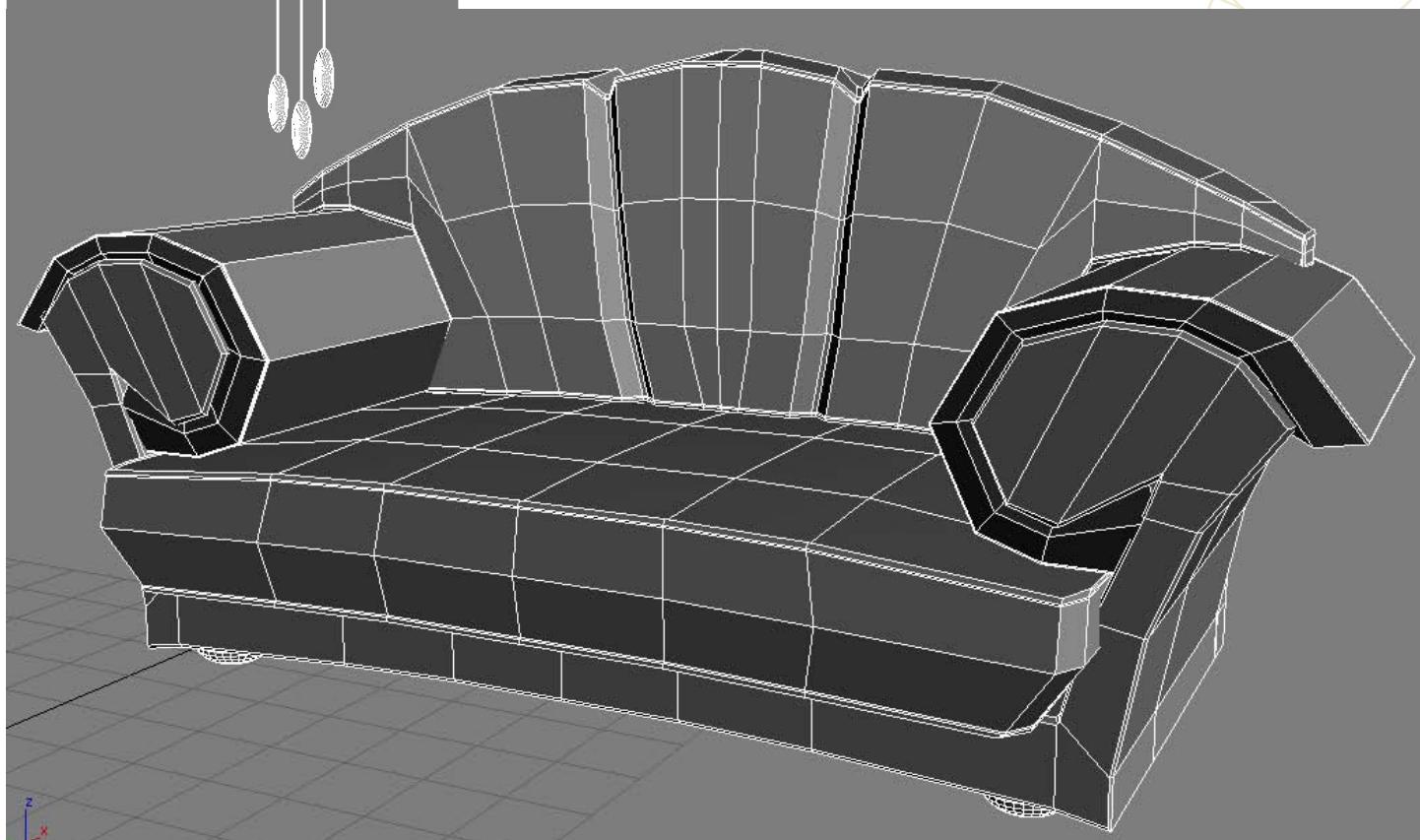
### STEP 1 -MODELING

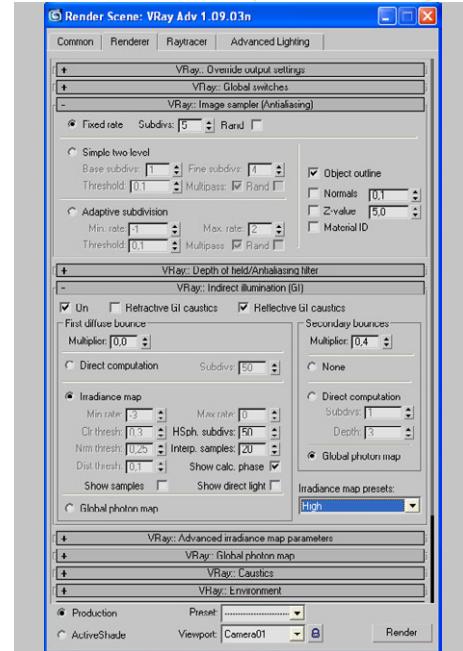
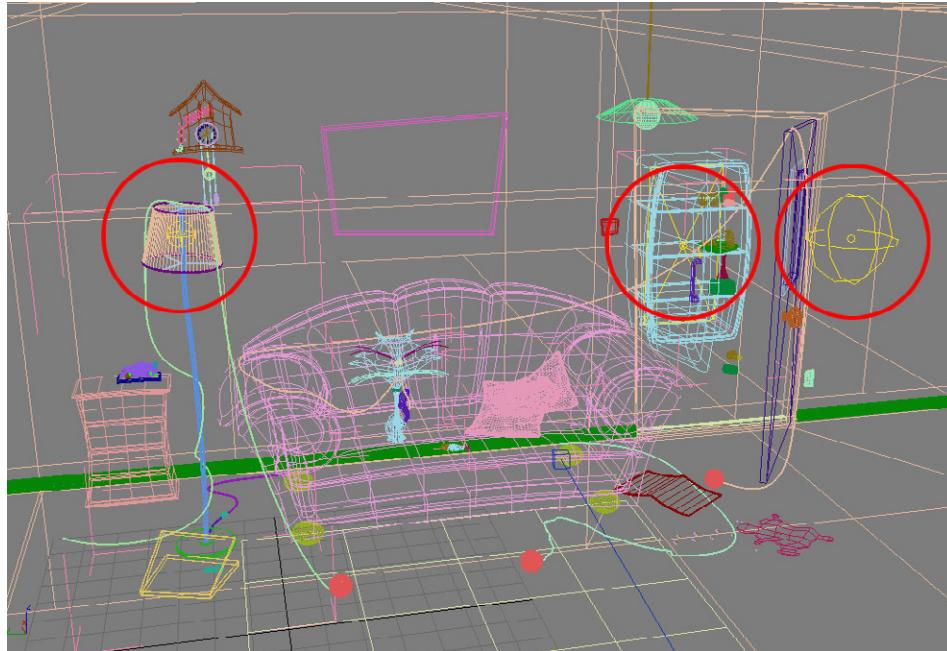
The main idea was to create a cartoon-like cat character, and a room, where nothing is "in order" – I mean not only the mess by the cat, but the objects are skewed, bent, etc. So, I used poly-modeling and meshsmooth for almost everything in the scene, including the cat, that started from a box. First I modelled the objects with straight edges, then cut them a few times and moved the vertexes to bend them, that's



how for example the couch and the cuckoo clock were modelled, you can see it on the wire pictures. The room's walls are simple boxes. I created the door by using the "cut" tool, cut it's shape out of the wall, detached the faces and used them to model the door. The balls of

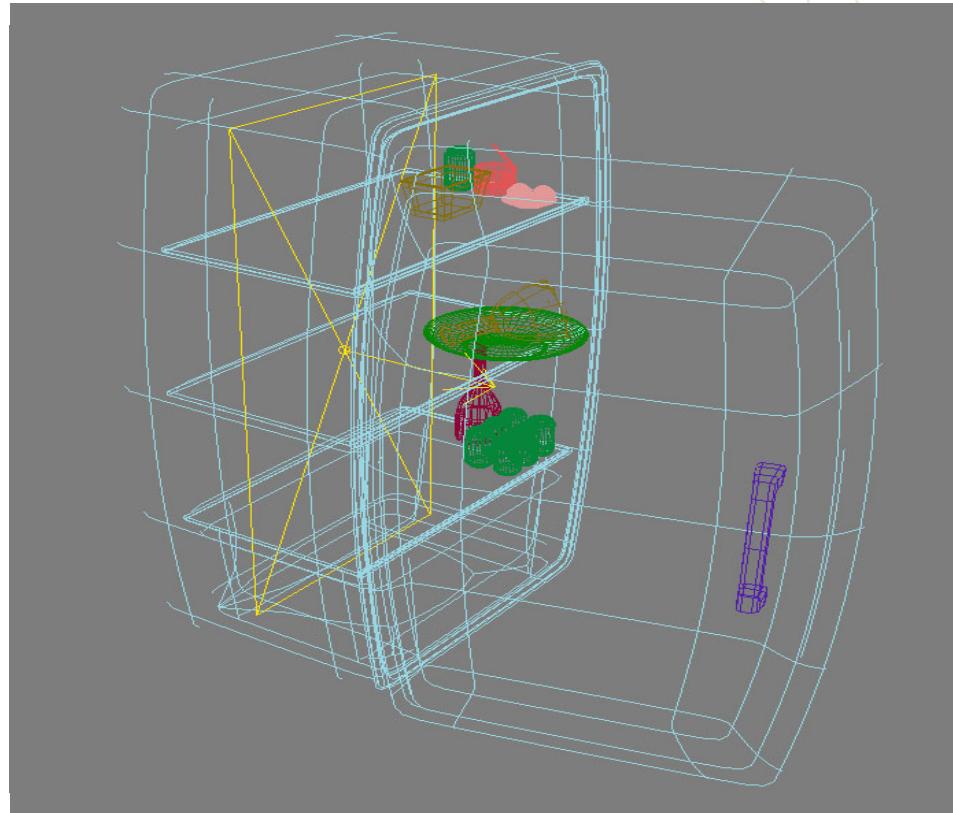
wool are lines and simple spheres with torus's around them in different angles. The fabric in the center of the room is a plane with a checker diffuse map I painted in Photoshop and a VrayDisplacement modifier, that uses a noise map.





## STEP 2 - LIGHTING, MATERIALS AND RENDERING

The materials are really simple. Most of them have only a diffuse map. I used only VrayMaterials and Standard materials. For the leather of the couch I used a noise bump map and only diffuse colour. The wooden objects (2 different types – the floor and the furniture / door) have a Vray-material with a wood-texture diffuse map and a dark grey reflect colour with 0.7 glossiness. The refrigerator has almost the same, but with white diffuse and 0,8 glossiness value. The lamp shade has a VrayMaterial too, yellow diffuse colour, a canvas-like texture for the refraction map and 0,8 glossiness value. For the lighting I used 3 VrayLights, one for the standing lamp in the left, one for the refrigerator and one behind the camera to brighten the scene. The lamp's light is a sphere type VrayLight, I turned off "cast shadows" for the lamp shade object to let the light through it. The refrigerator light is a plane VrayLight behind the food and stuff in the refrigerator with "Double sided" and „Invisible" option checked. I made it invisible, because if it would be visible, it would cause too strong white reflections on the cans. This makes the inside of the fridge very bright,

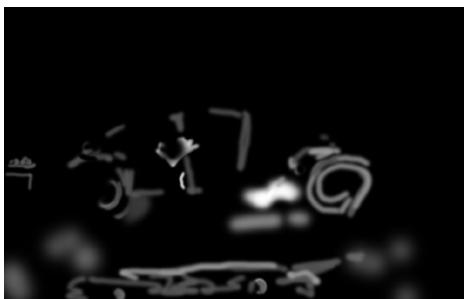


the food and cans in it dark (the reflective objects have a bit brighter edges of course) and this all looks good in the dark room (the kitchen). The third light is sphere type too, it is near the ceiling behind the camera. It is invisible too, because I didn't want it to be seen on reflective objects, its purpose is just to brighten the room.

About the rendering setup I made a screenshot of my settings. For the Anti-Aliasing I used fixed rate with 5 Subdivs. I turned on "Indirect illumination", changed the first- and secondary bounces multiplier to 0,8 and 0,4, chose „Irradiance map" and from the Irradiance map presets chose „High".



## Bad Kitty The Making Of



### STEP 3 - POST WORK

After rendering the scene, I changed the render engine to MentalRay and gave the whole scene a middle gray colour material, deleted the VrayLights and put a skylight in the scene. At the rendering settings, I changed the Final Gather samples to a very low value (about 40) in order to get an image, that looks like an occlusion map but is a bit "dirty", and rendered the scene. In Photoshop after some brightness and contrast correction (increased a lot both) I put it over the first render and changed its blending to multiply. I added a layer mask on it, and painted white where I wanted dust on the coach (that's why I used so low value for the Final Gather samples) or darker shadows – you can see the map and the mask on the pictures.

It was important, to switch the render-engine to MentalRay, because you can't have the same effect with Vray, if you try low samples, you just get a very noisy picture. In Photoshop I painted the eyes of the cat – the object was just a green sphere, so I drew 2 little black and 2 tiny white dots. The crack on the wall and the carving on the clock were added in Photoshop too. After some brightness and contrast modifications and colour correction, I used a sharpen filter then added a little diffuse glow on the most glossy objects (the doorknob, the can on the kitchen's floor), and that's all, the picture is finished.

(Final image)

**TAMÁS TÓTHFALUSSY**

For more work from this artist please contact  
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bad kitty - created by tamás tóthfalussy  
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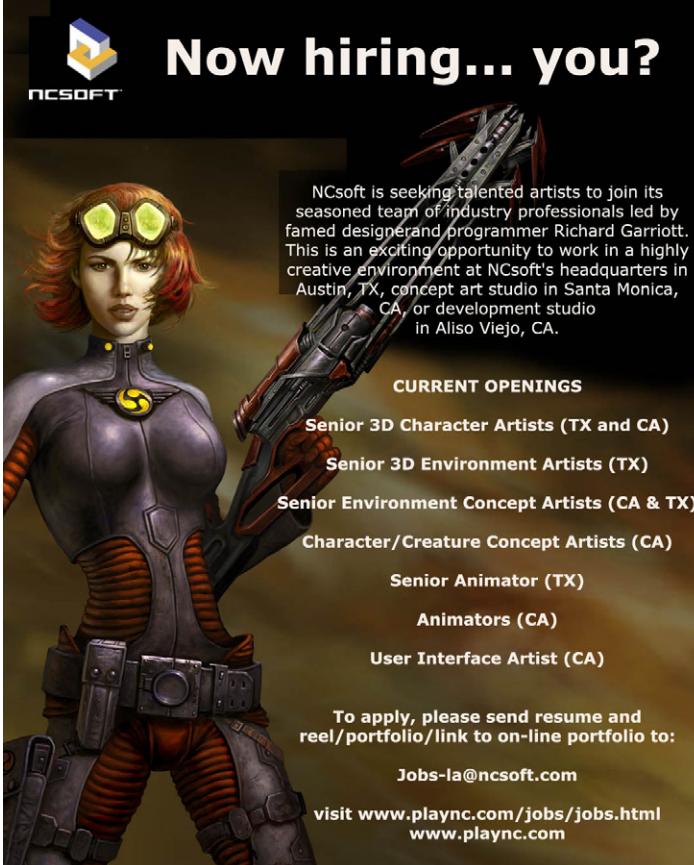
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Swordmaster  
Final Part 8 of 8  
Texturing Armour and Clothing

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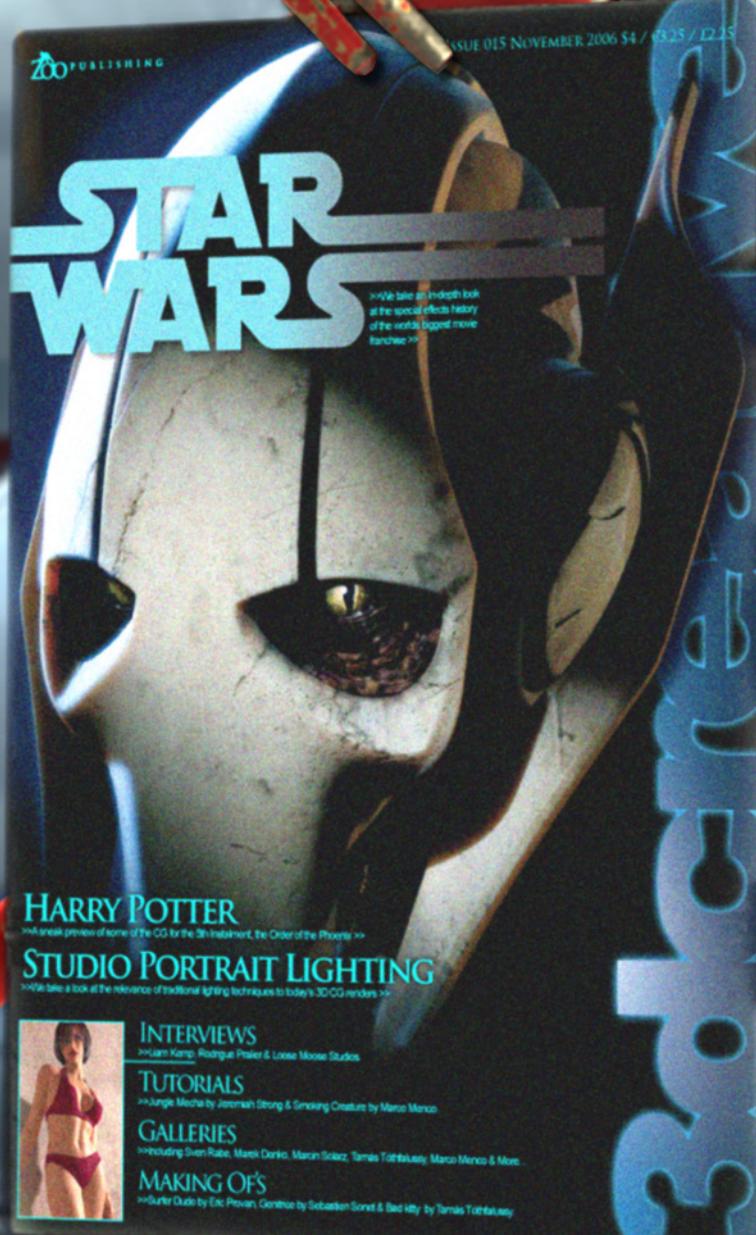
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## THE SWORDMASTER

# 3ds max

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TEXTURING THE SKIN & BODY

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TEXTURING THE ARMOUR &  
CLOTHING

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## PART 7 TEXTURING SKIN AND HAIR

### INTRODUCTION:

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Fig01

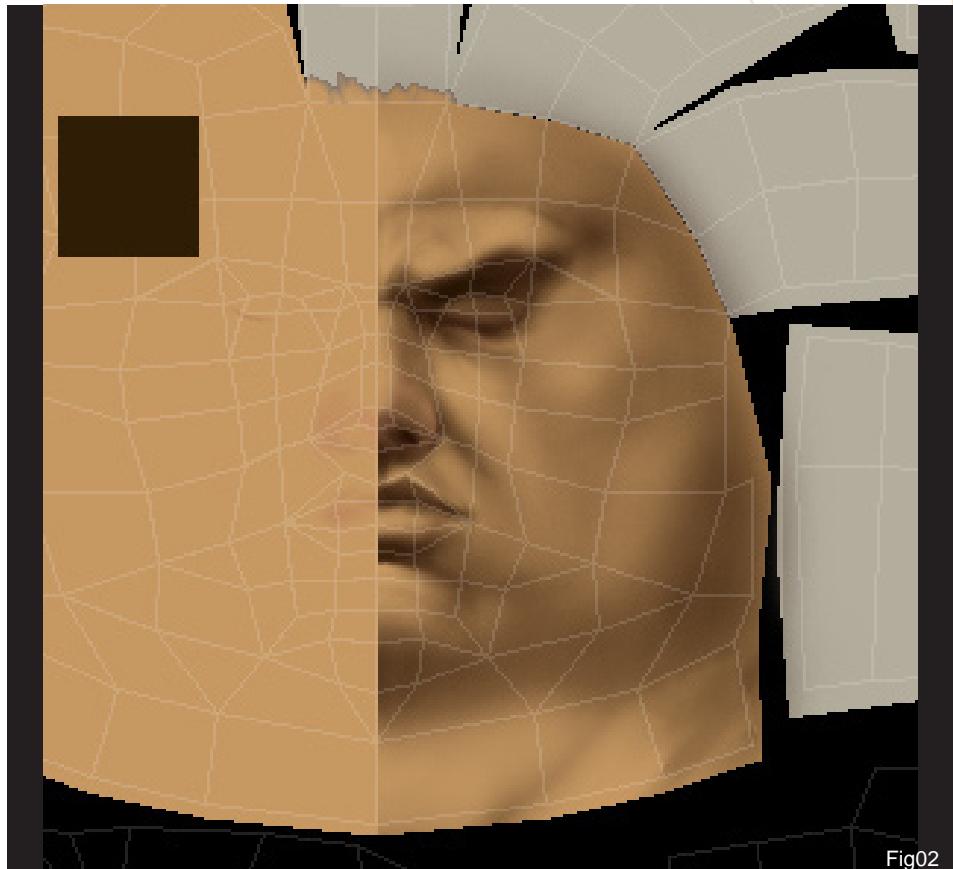


Fig02

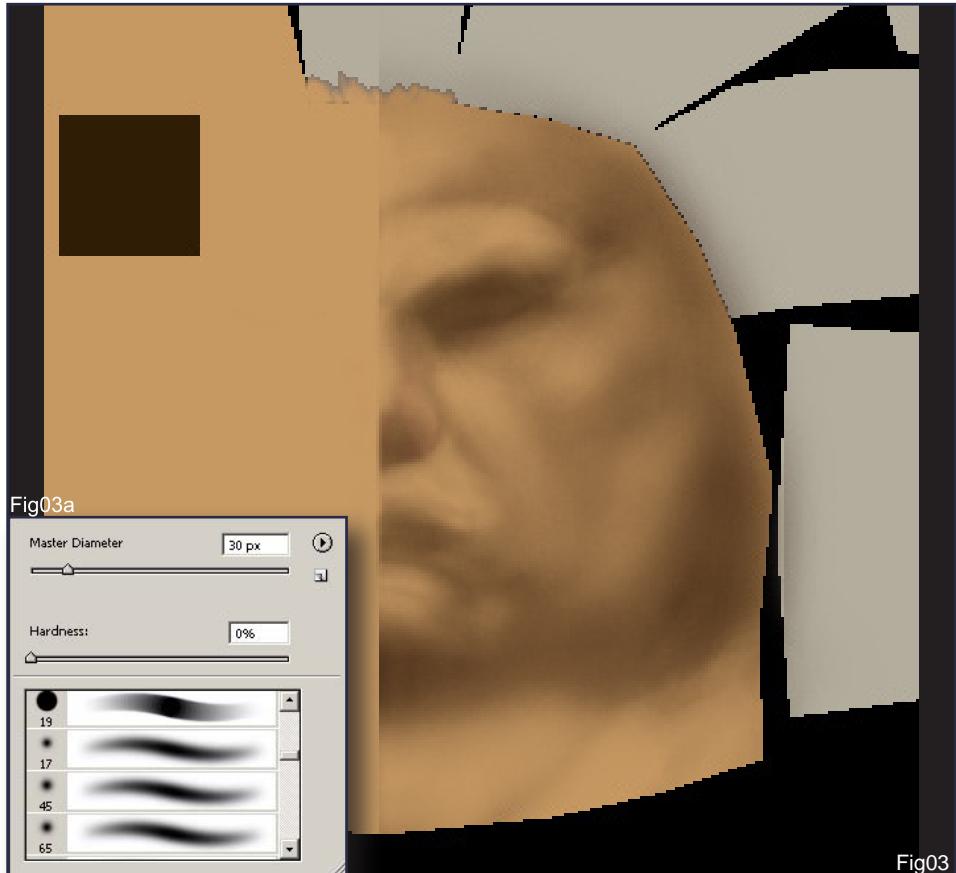
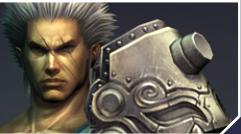


Fig03a

Fig03

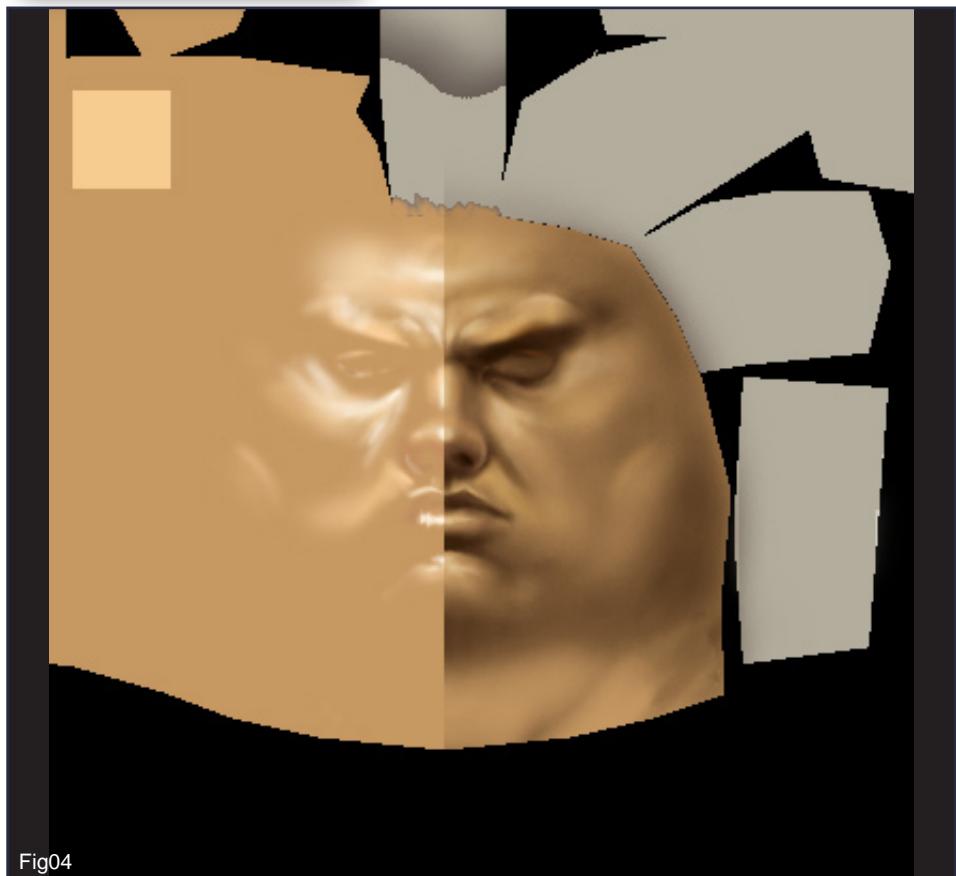
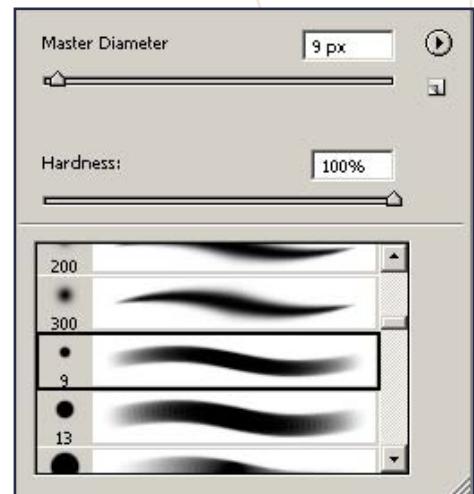


Fig04

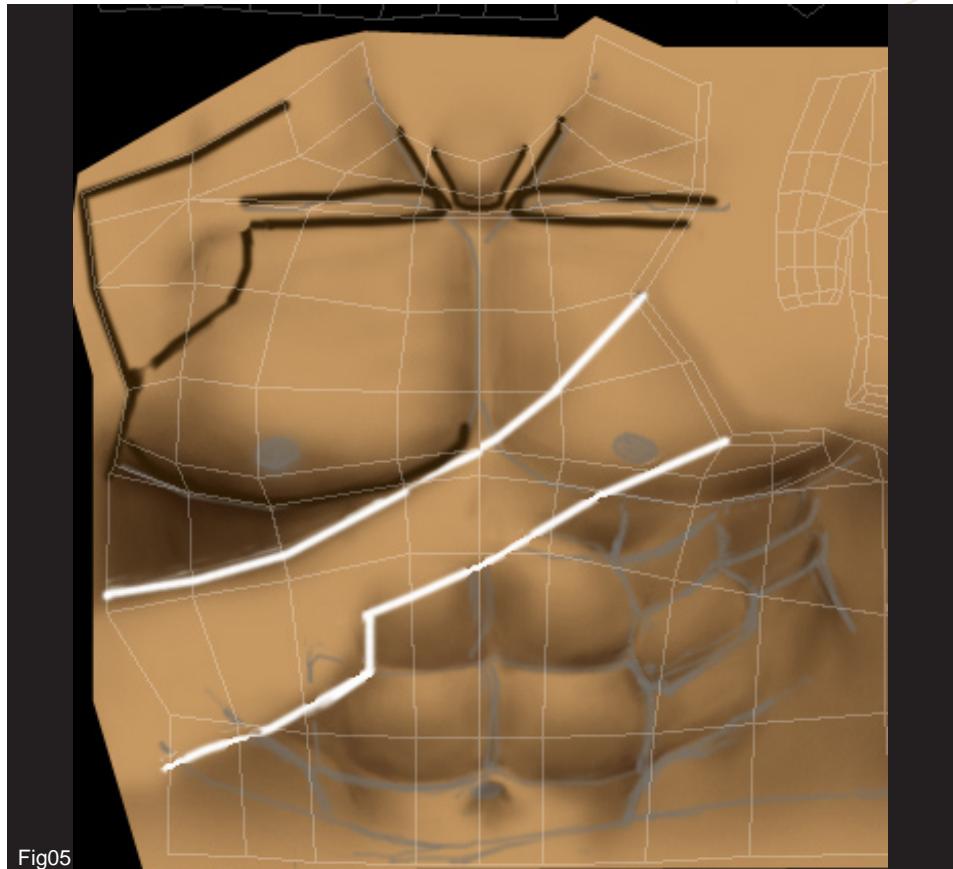
3. First of all, concentrate on only one half of the face as we can copy this over when it is finished. Choose a standard soft round airbrush with a pixel width of around 30 (Fig03a) and carefully paint in the general areas of shadow without worrying too much about detail (Fig.3).

4. You can alter the opacity and flow values of the brush along the toolbar to help control the strokes and, when you are happy, then select a hard-edged airbrush (Fig.4a) to refine the detail so that it looks similar to Fig. 2. Remember to use only one colour for all of the shading and keep it on a single layer. Now that the face has a shadow layer intact it is time to add another layer, this time dedicated to highlights. I chose an initial pale yellow, as shown by the square inset in the top left of Fig.4, and set the layer blending mode to Soft Light. I also used a near-white colour in a few areas to add the brightest highlights. On the right of the face is the final version and on the left is the layer set to Normal blending mode and without any shadows so you can see more clearly where it is placed. When painting textures for low poly characters, try and imagine that there is a soft ambient light above the character, as if they are outside. This helps the eye read the forms better and generally creates a more realistic lighting solution.

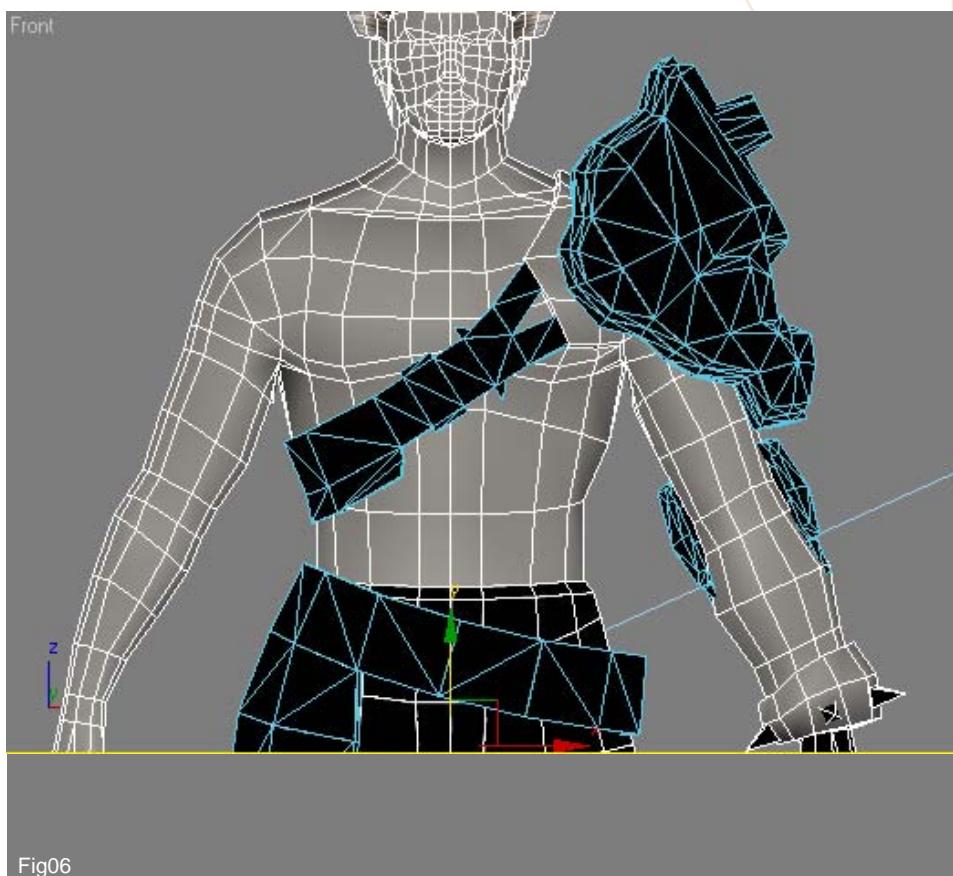




5. With the head area well underway, it is a good time to start on the body section. The same principles apply for all the skin sections. Start with the shadows and then move onto the highlights layer. I also find that to help get details in the correct areas, it is useful to create a new layer which I call "Guidelines". On this layer, I draw line configurations and then save out the image and load it onto the model. This enables me to see where to paint in certain parts of the texture, as seen in Fig.5. I have used a white line to depict the area covered by the armour strap and also drawn in the abdominal muscles before starting on any shading.



6. To help get the armour strap in the right place, simply look at a front view of the character in your 3d program and use the wireframe as a guide (Fig.06)



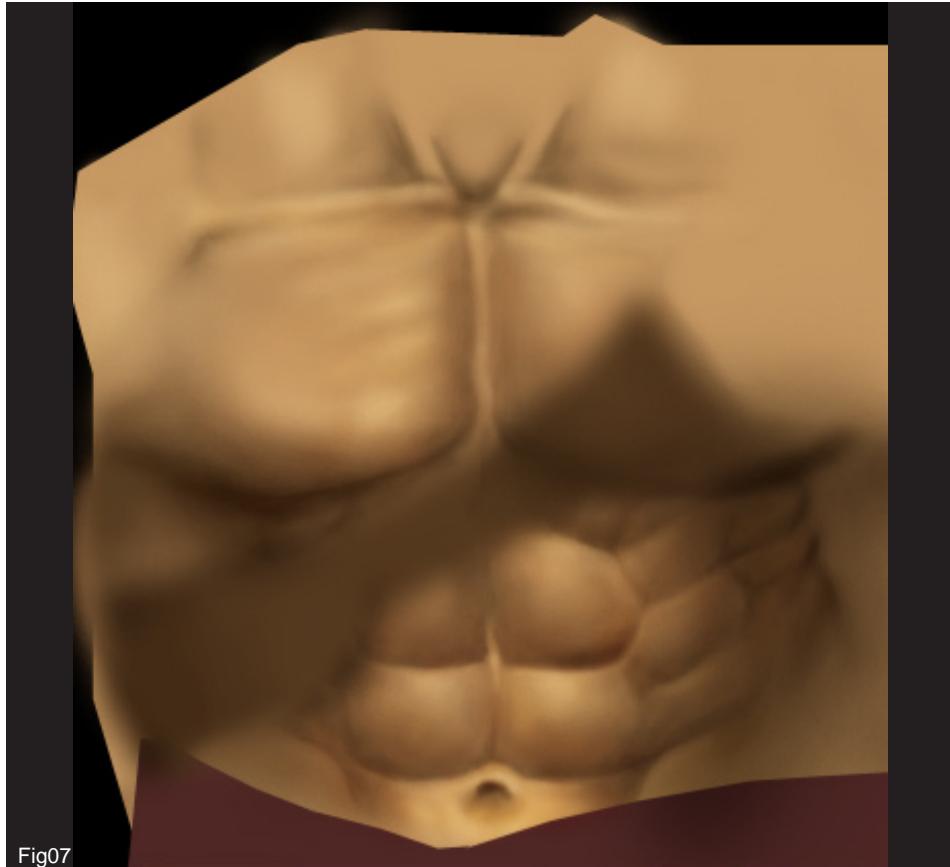


Fig07



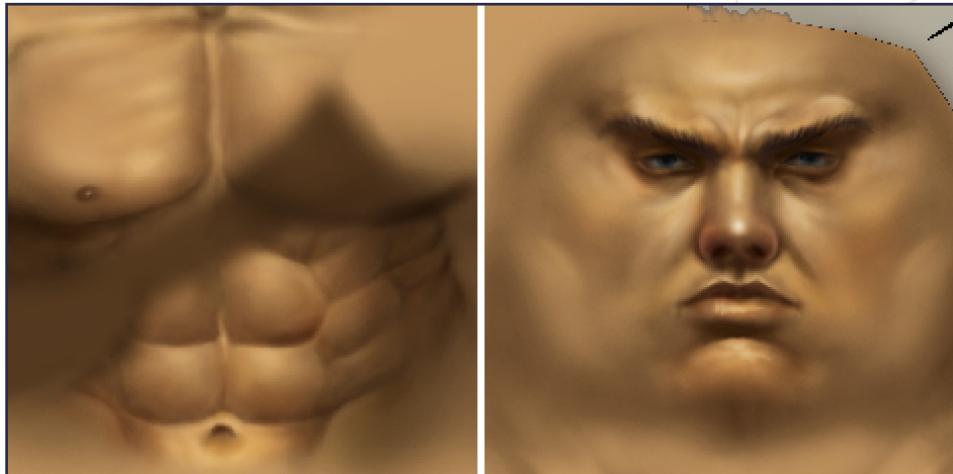
Fig08

7. When you have finished the shading on the torso, use the guideline to paint in a shaded area that follows the strap on a separate layer, which will help bind it to the body (Fig.07). You will also need to repeat this for the back section of the character too. Use the same colour as the shadow layer and set the blending mode to 'Multiply' to keep things consistent.

8. We have covered the crucial stages of painting the skin but we are yet to add in the details which we shall yet again do on a new layer. In this part of the tutorial we will deal only with the eyes, eyebrows and nipples. There are no special techniques here, just careful painting using a small standard airbrush. In Fig.08, you can see a close-up of the eyes and eyebrows. I have chosen blue as a colour, but the important thing to remember is that they do not appear too bright and feel very much as though they are sunk in the head and in shadow. I also added a small highlight on the tip of the nose to help distinguish it.



9. Now add a further layer and set it to Soft Light (I named mine 'colour tints'), and, using a purple colour similar to the small inset in Fig.09, begin adding some colour variation across some of the body and face. Be sure to keep away from the seams and do not overdo it – you will notice I have concentrated around the eyes and nose on the face with small patches on the chin and cheeks too. This will help break up the monochromatic quality and create some interest across the areas of skin.



Soft Light

Fig09

10. With regard to the arm and back section of the model, I suggest you always start on the guidelines layer and draw in the shapes of the muscle groups and then save out an image to test the accuracy on your actual mesh before embarking on any significant detail and shading. This is essentially trial and error and will mean many changes and test renders before you are confident in painting in the main shadows and highlights that will define the form (Fig.10).

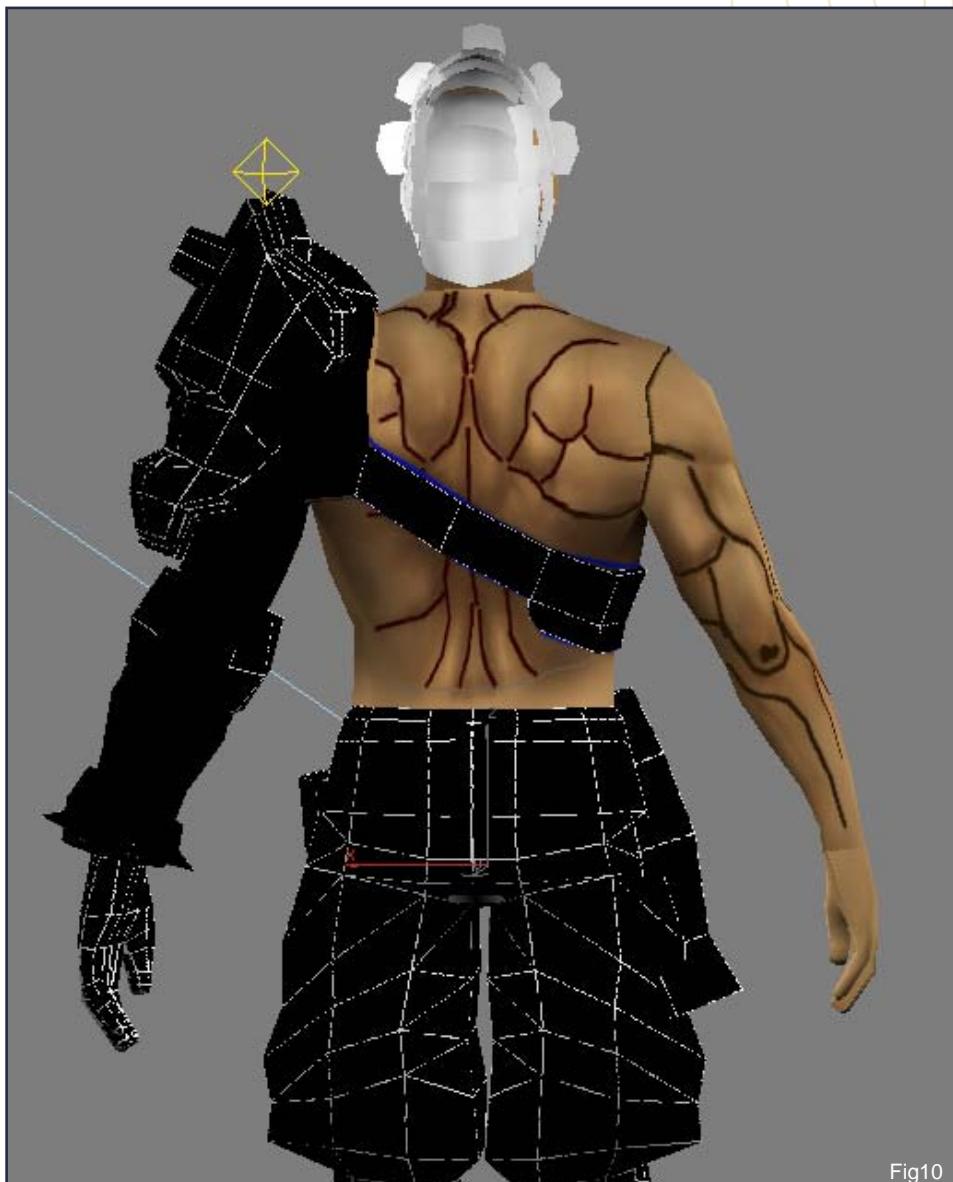


Fig10

11. With the face and body sections well

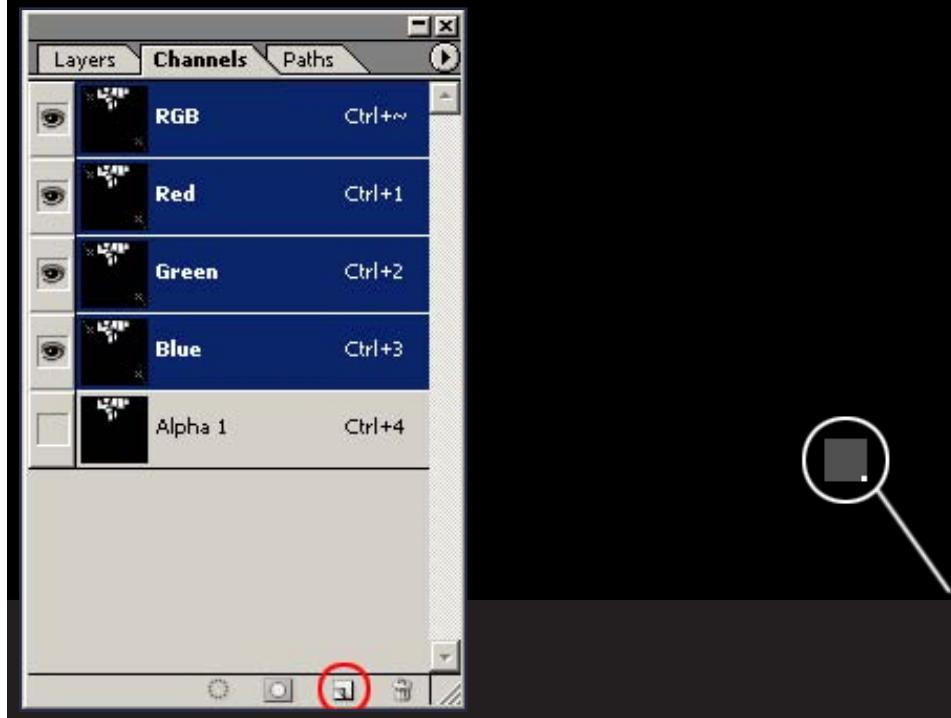


Fig11



Fig.12a

Fig12



underway, it is a good time to make a start on the hair. This will utilise an alpha channel which shall be used to control the opacity within Max in order that we can identify hair strands. What I do here is create a new layer which I call 'Hair alpha' and I use a pure white colour and paint in the hair strands, as seen in Fig.11. We shall then copy this entire layer and paste it into a new Channels layer.

12. Select the Channels tab and click on the small icon ringed in red in Fig.12a. This will create a new channel that is called Alpha 1 by default. Now, before we paste our hair outline into this new channel, zoom in on two opposite corners and paint in a 1x1 pixel square, as seen in Fig.12. This will not effect the texture as the two squares are outside the mapping co-ordinates but will ensure that the hair shapes remain in exactly the same positions when they are pasted.

13. Copy 'hair alpha' into the Alpha 1 and then



save out the image as a 32 bit tga, which will retain the alpha channel. In max, load the tga into the Opacity slot in the Maps rollout of the Material Editor, as shown in the upper part of Fig.13. When you click on the map slot (ringed in red) it will take you to the Bitmap Parameters where you will need to select the two highlighted radio buttons. When you look at your character in Max, the white areas should remain visible and the surrounding black areas should become invisible.

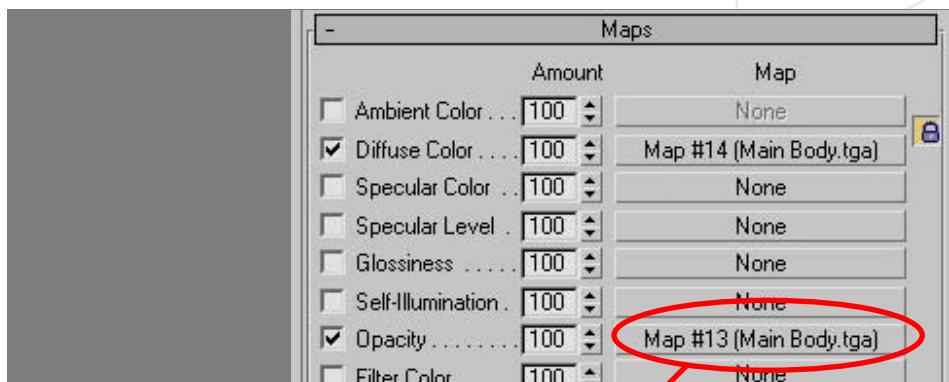


Fig13

14. In Fig.14, the white areas will be the hair, which we will see, but the grey boundaries of the poly's will disappear in the final render.

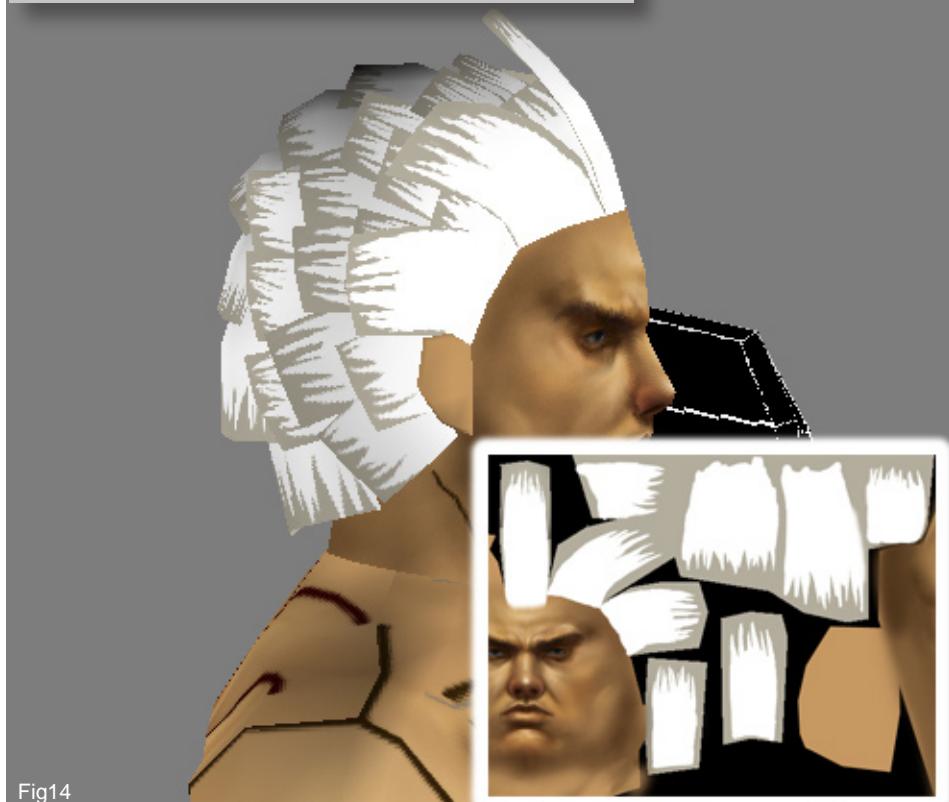


Fig14

15. Now that we have the outline of the hair we



Fig15

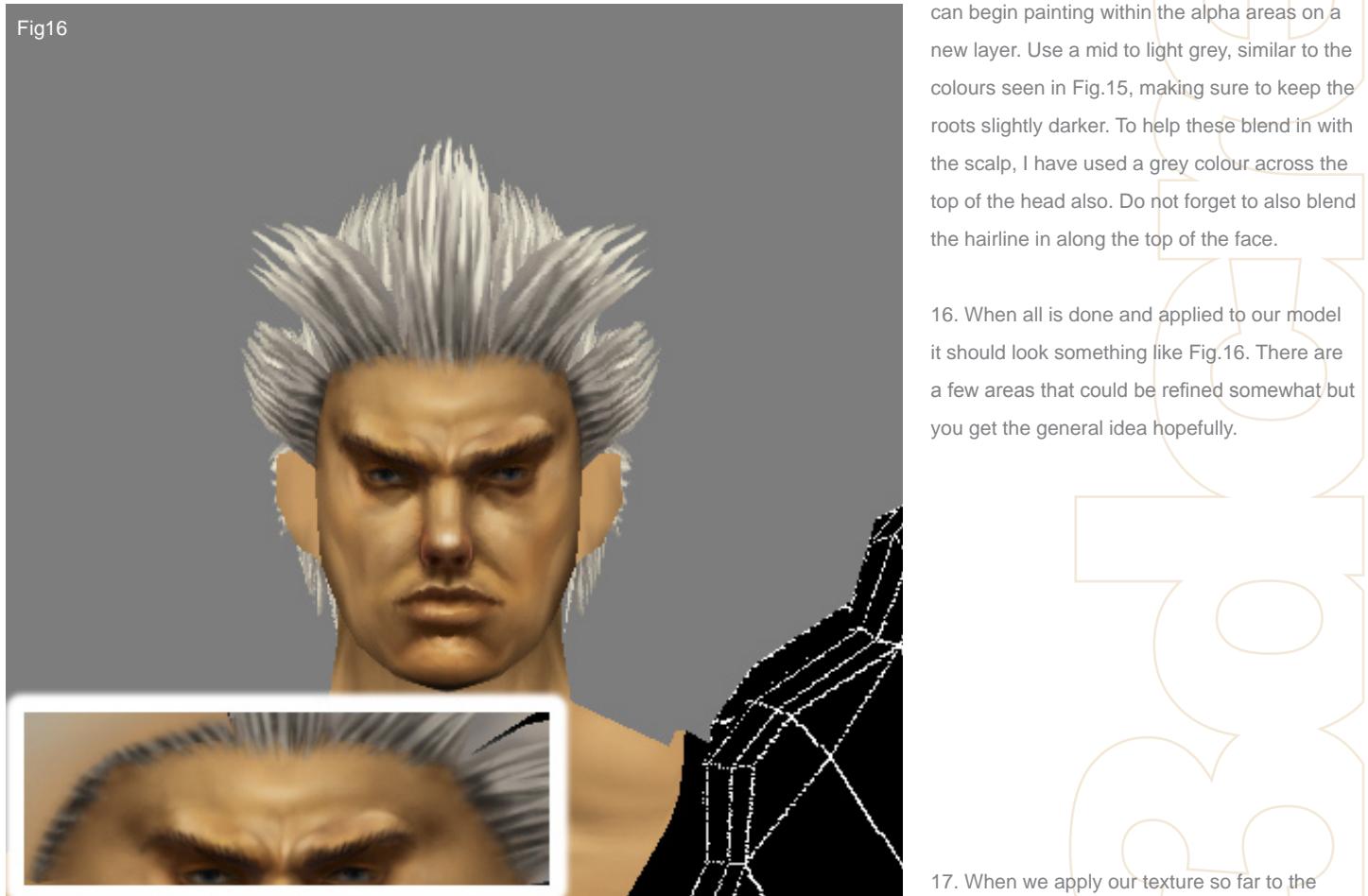


Fig16

can begin painting within the alpha areas on a new layer. Use a mid to light grey, similar to the colours seen in Fig.15, making sure to keep the roots slightly darker. To help these blend in with the scalp, I have used a grey colour across the top of the head also. Do not forget to also blend the hairline in along the top of the face.

16. When all is done and applied to our model it should look something like Fig.16. There are a few areas that could be refined somewhat but you get the general idea hopefully.

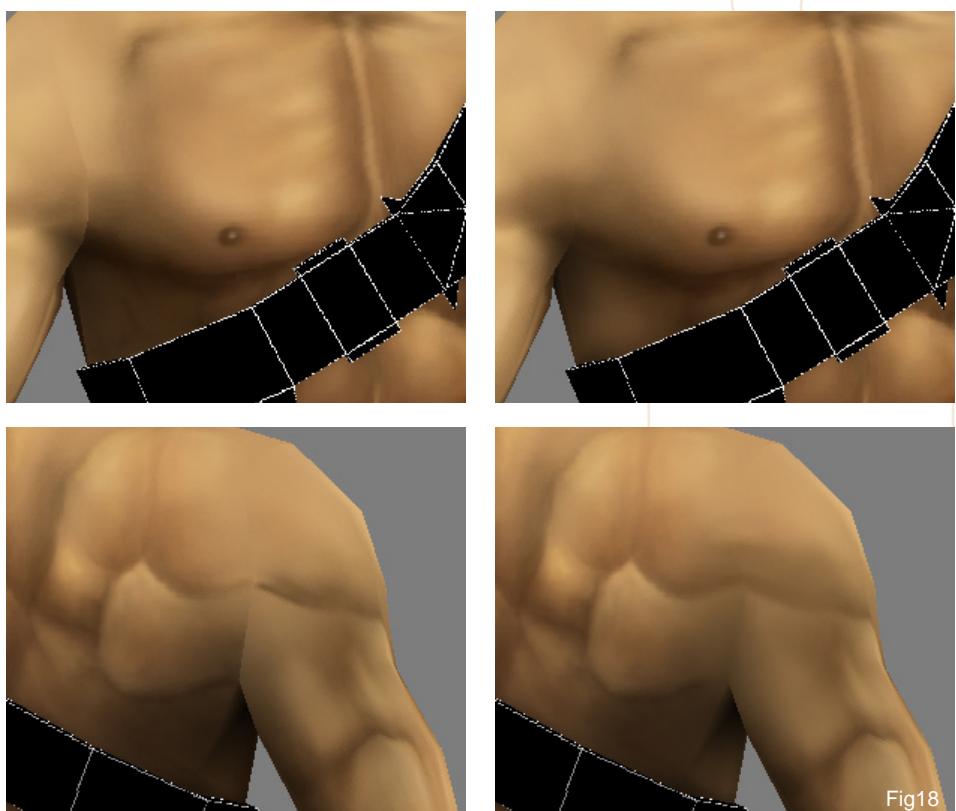
17. When we apply our texture so far to the



model you may notice that there are a few areas along the seam lines that do not match up very successfully. It is a good idea to create a new guideline layer to establish which edges are adjacent on the model. Try painting different coloured lines and matching them up along certain edges as seen in Fig.17. You can see that the black and orange lines on the body are joined with the top seam of the arm in the upper right, and so on. What you need to do now is to make sure that the RGB values along the corresponding edges are similar and have a relative variation on each poly.



18. In Fig.18, you can see the seam problems around the top of the arm on the left side of the image where the edges do not match. On the right side is the revised version which shows an improvement.



This just about concludes the most crucial



stages of texturing the skin areas and hopefully gives you a good picture of how to go about structuring your PSD file into key components.

All that is left are the ear and hand, which are predominantly done using methods already outlined.

The hair could be tweaked to a degree improve the look but you should be armed with enough knowledge to try your hand at painting a texture from scratch. Next month will see the conclusion of this Swordmaster tutorial, when we tackle the armour and clothing.

Tutorial By :

**RICHARD TILBURY**

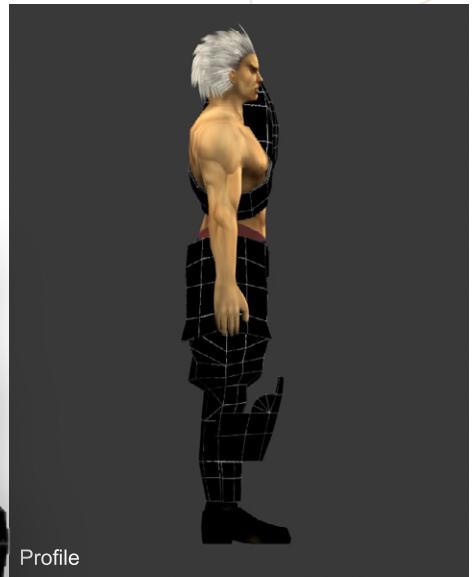
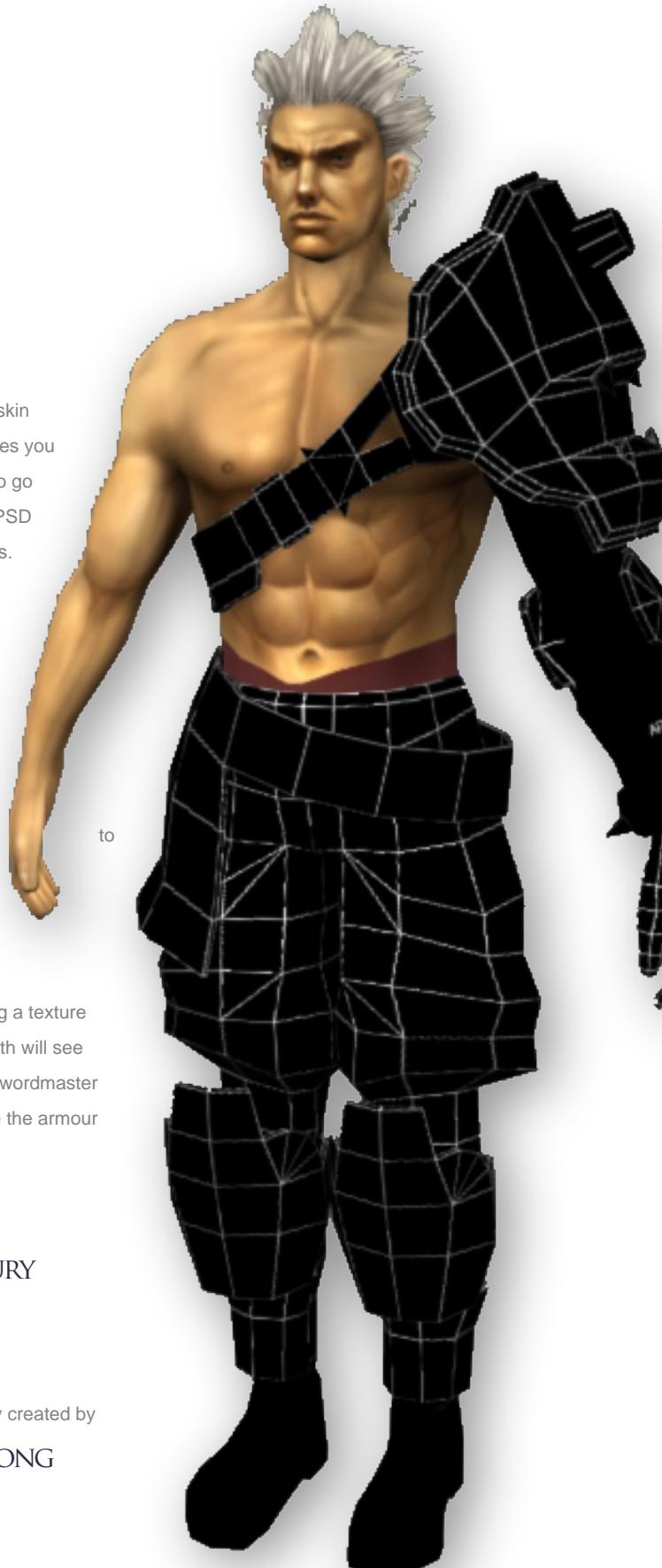
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The 'Swordmaster' character was originally created by

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www.xcloud.net

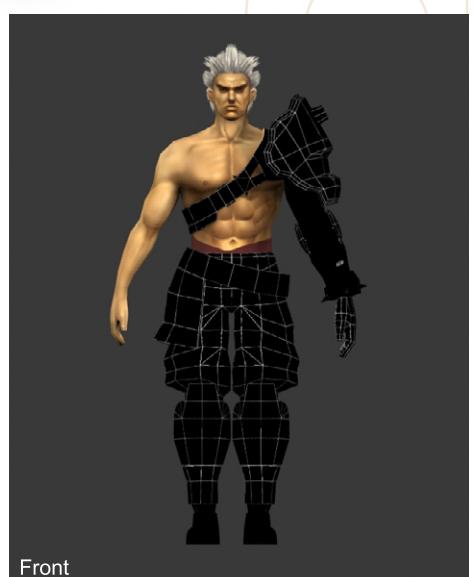
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## THE SWORDMASTER



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## PART 7

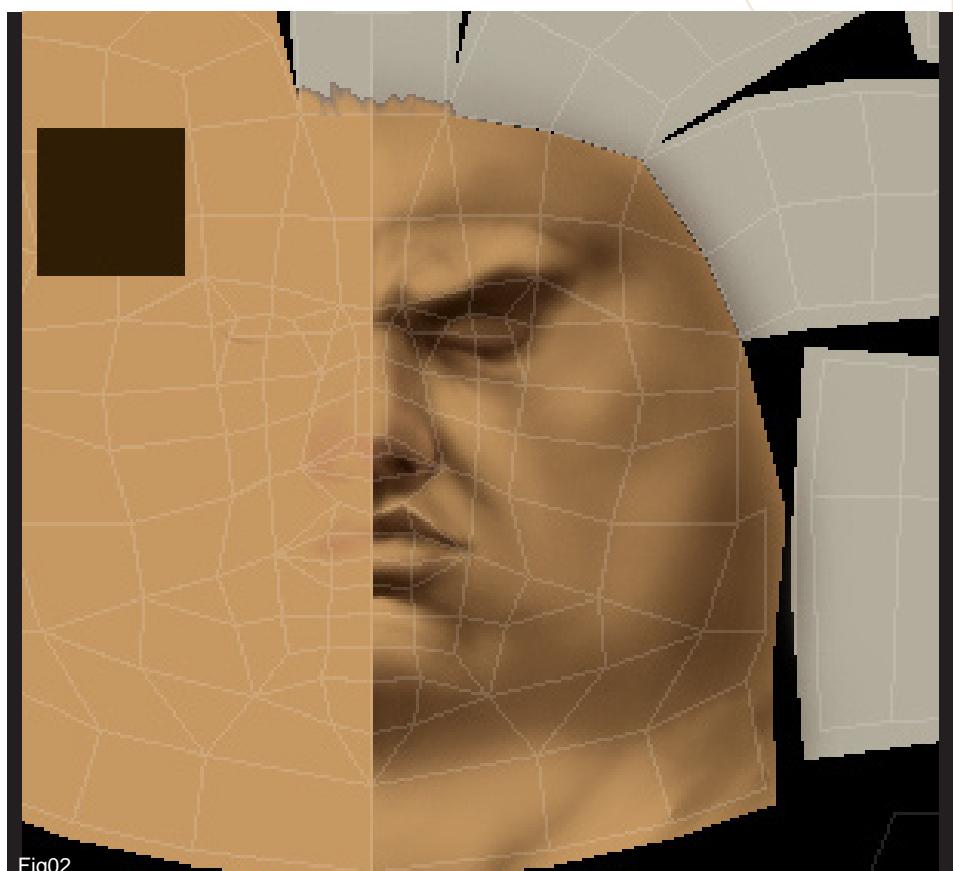
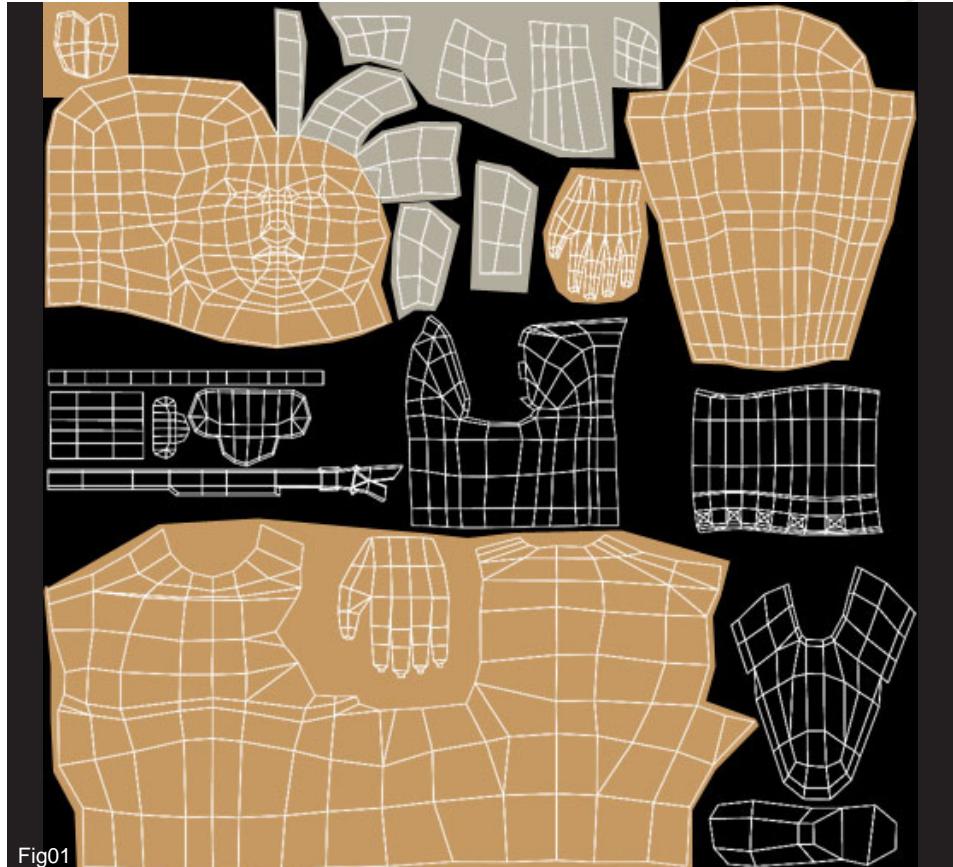
# TEXTURING SKIN & HAIR

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SwordMaster

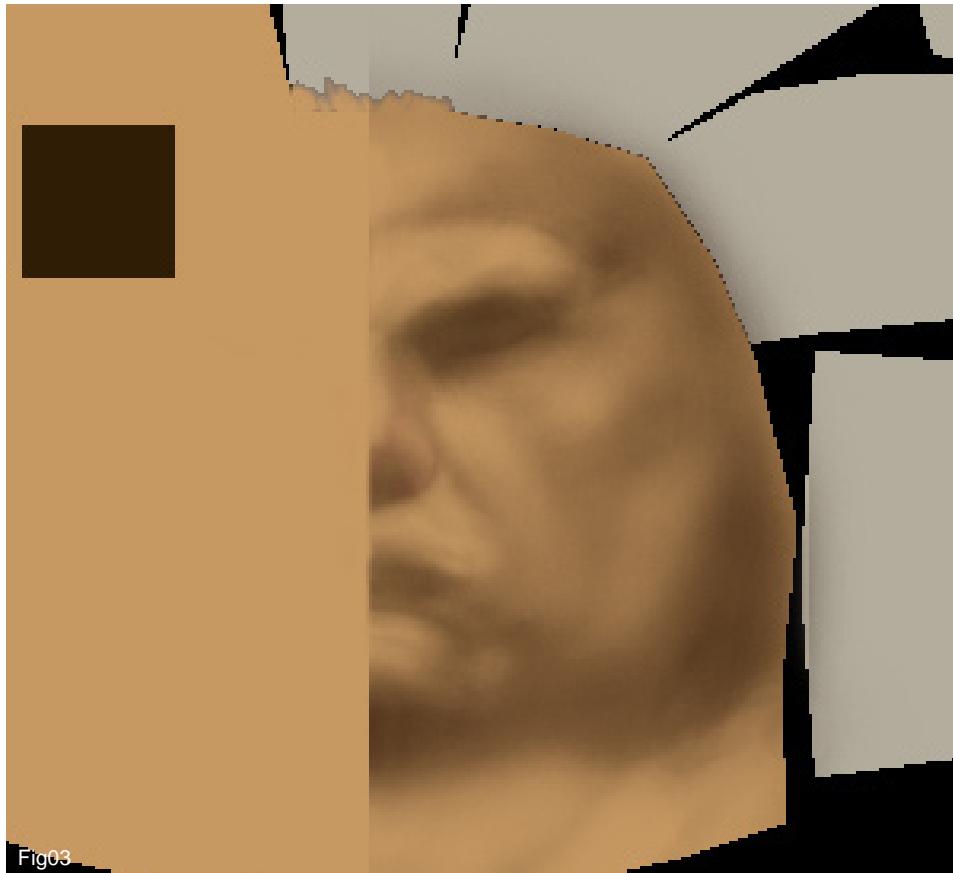


Fig03

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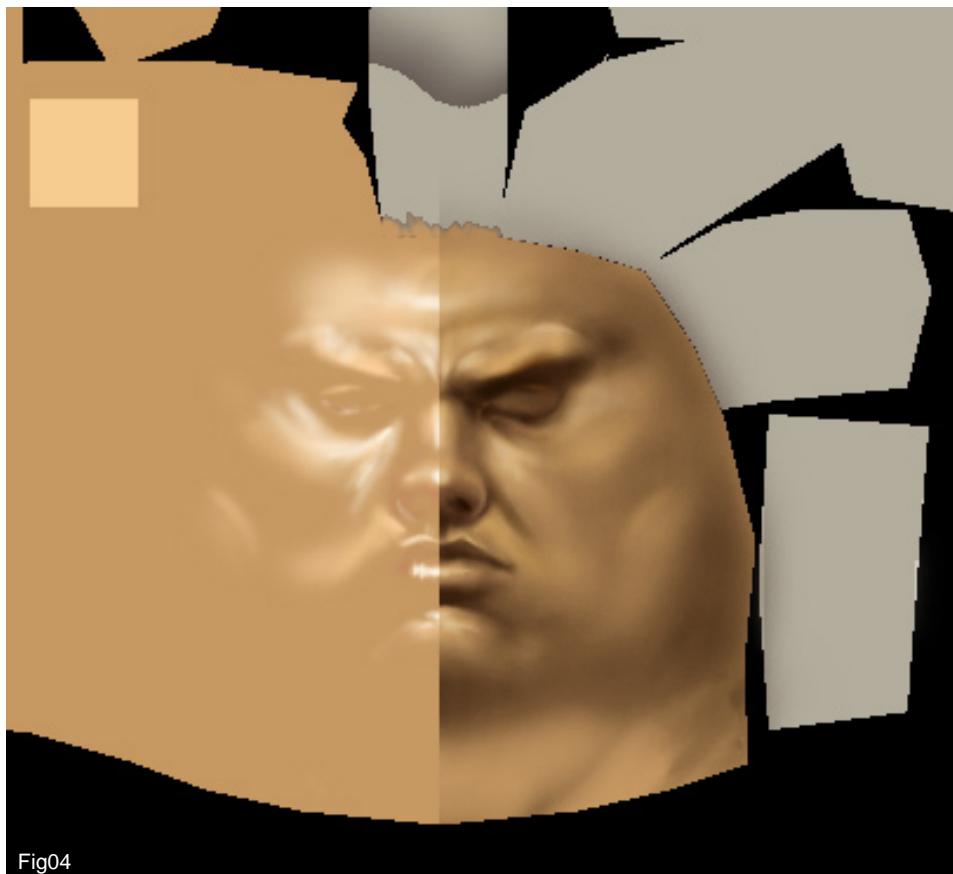
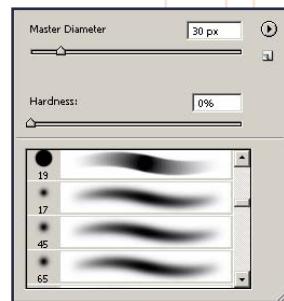
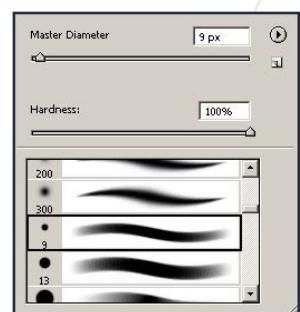


Fig04

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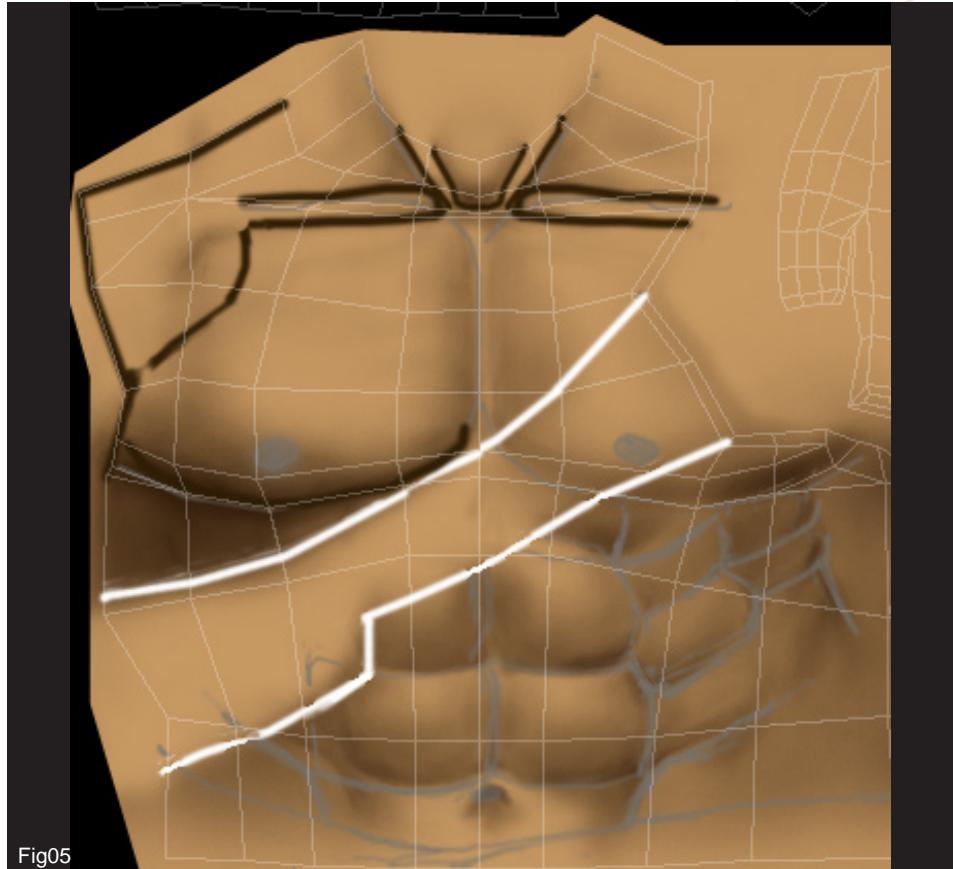


Fig05

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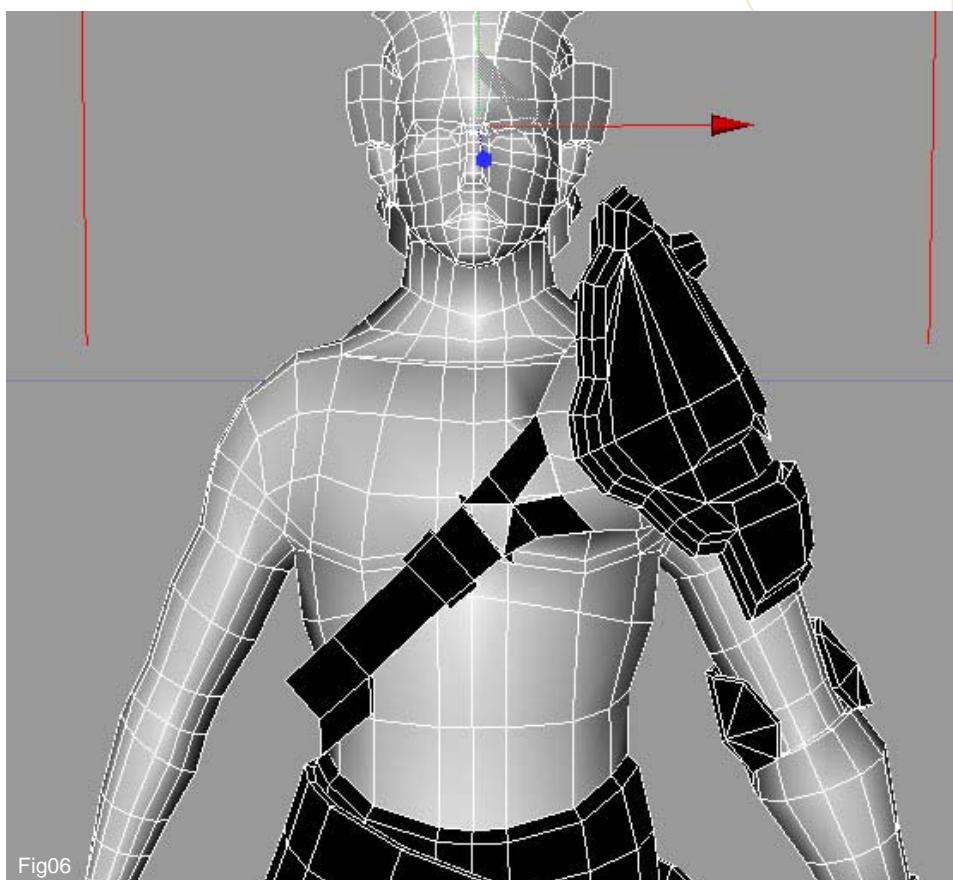


Fig06

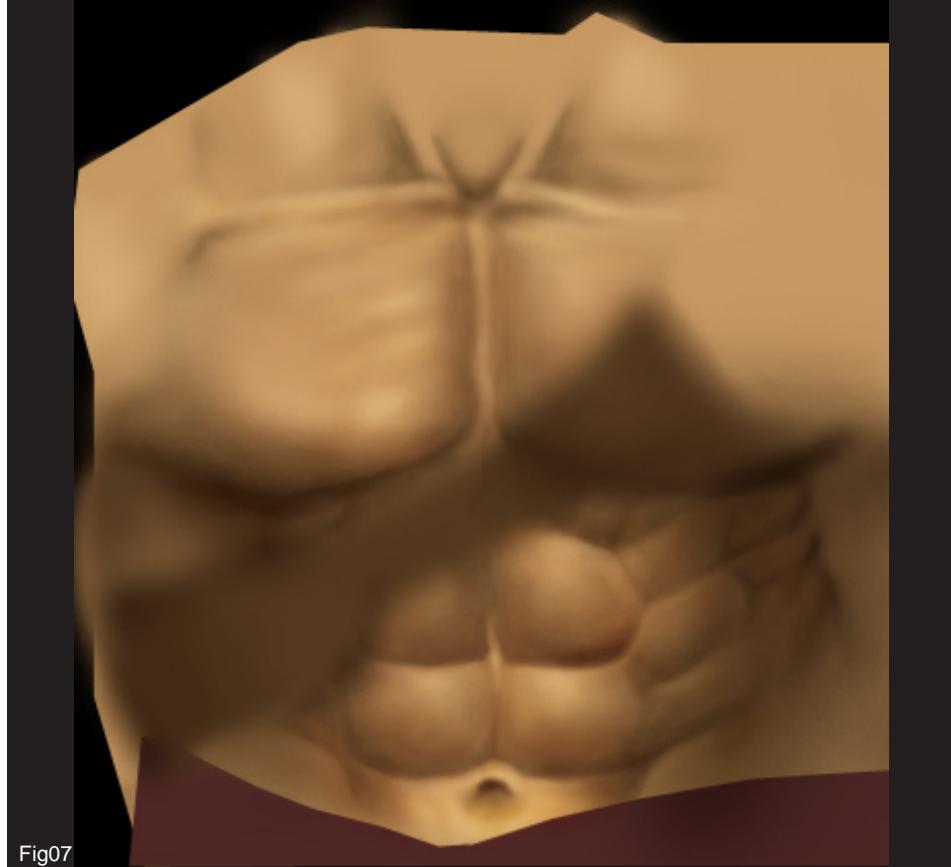
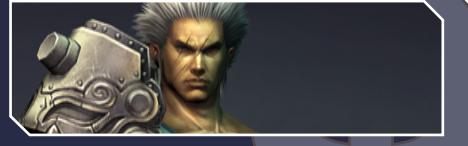


Fig07

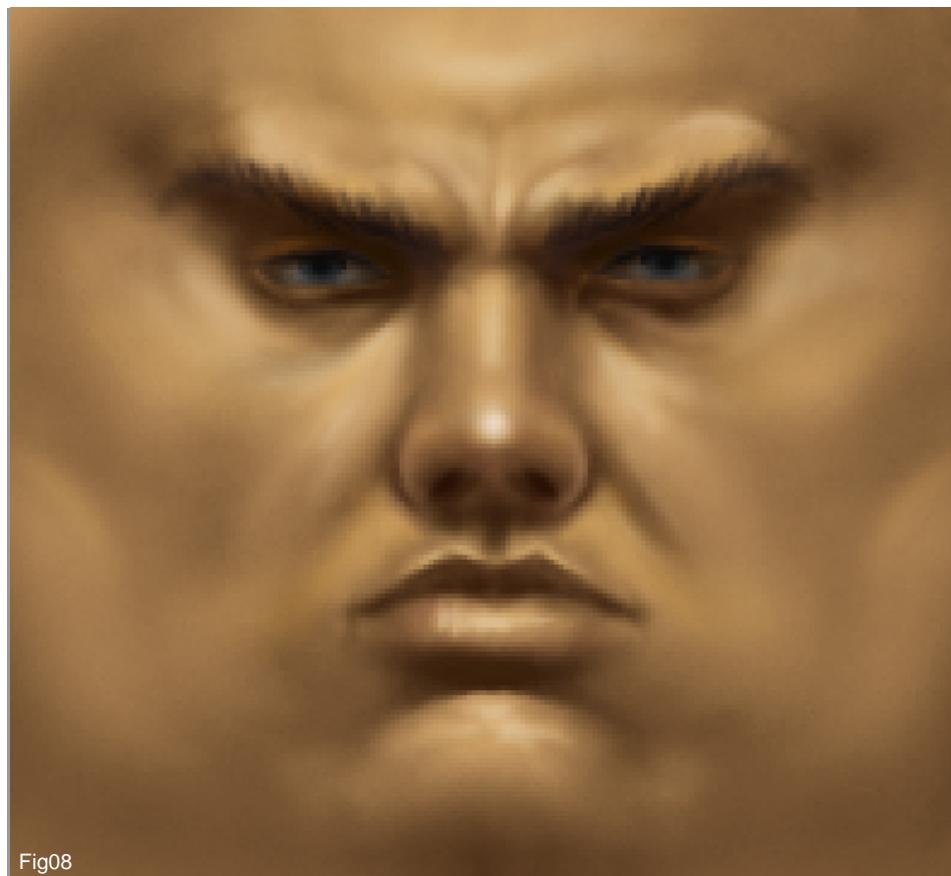


Fig08

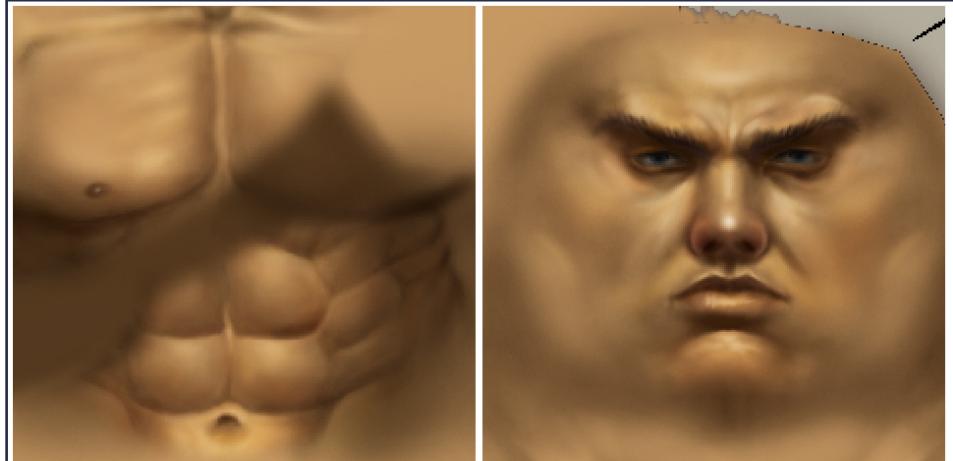
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Soft Light

Fig09

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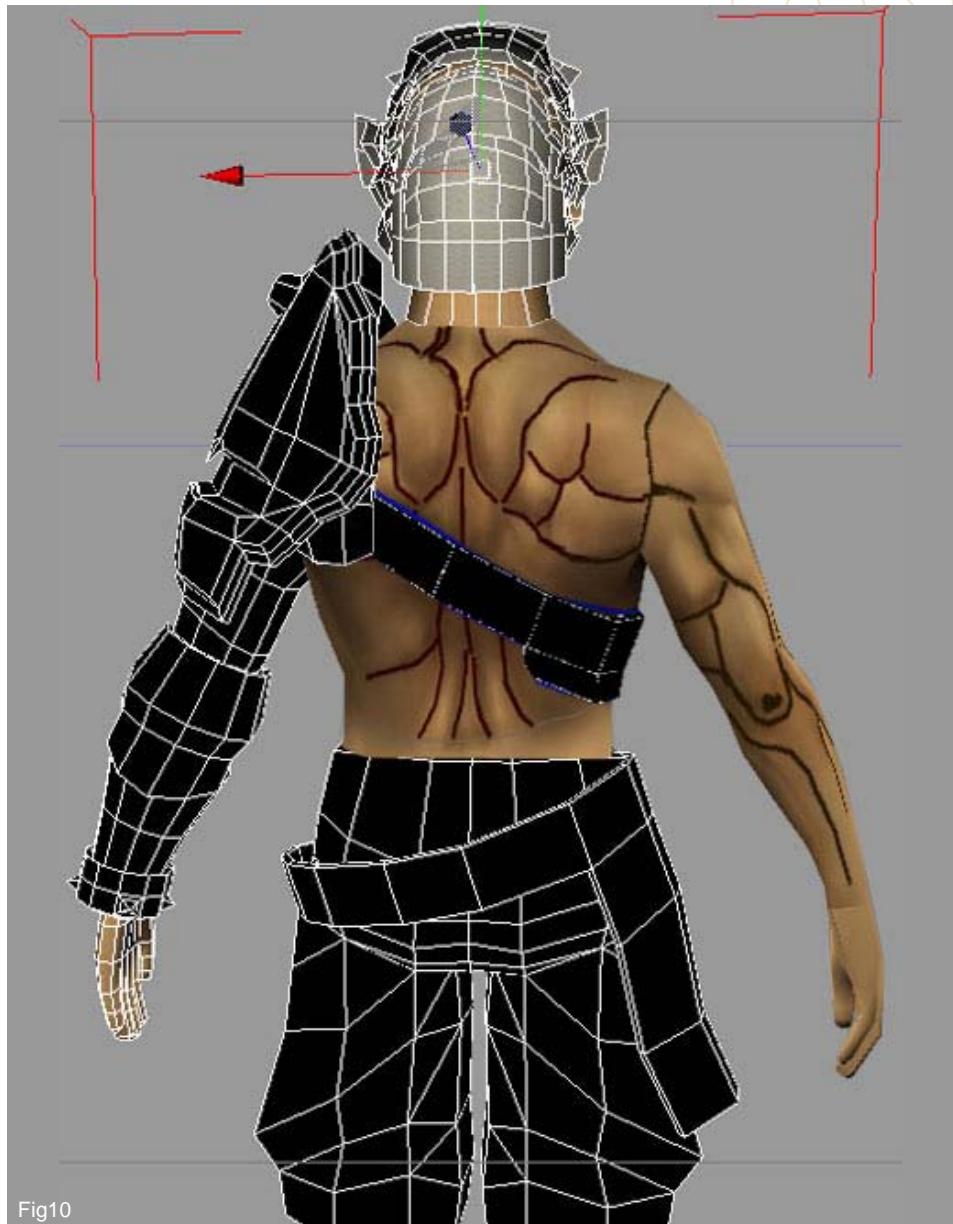


Fig10



Fig11

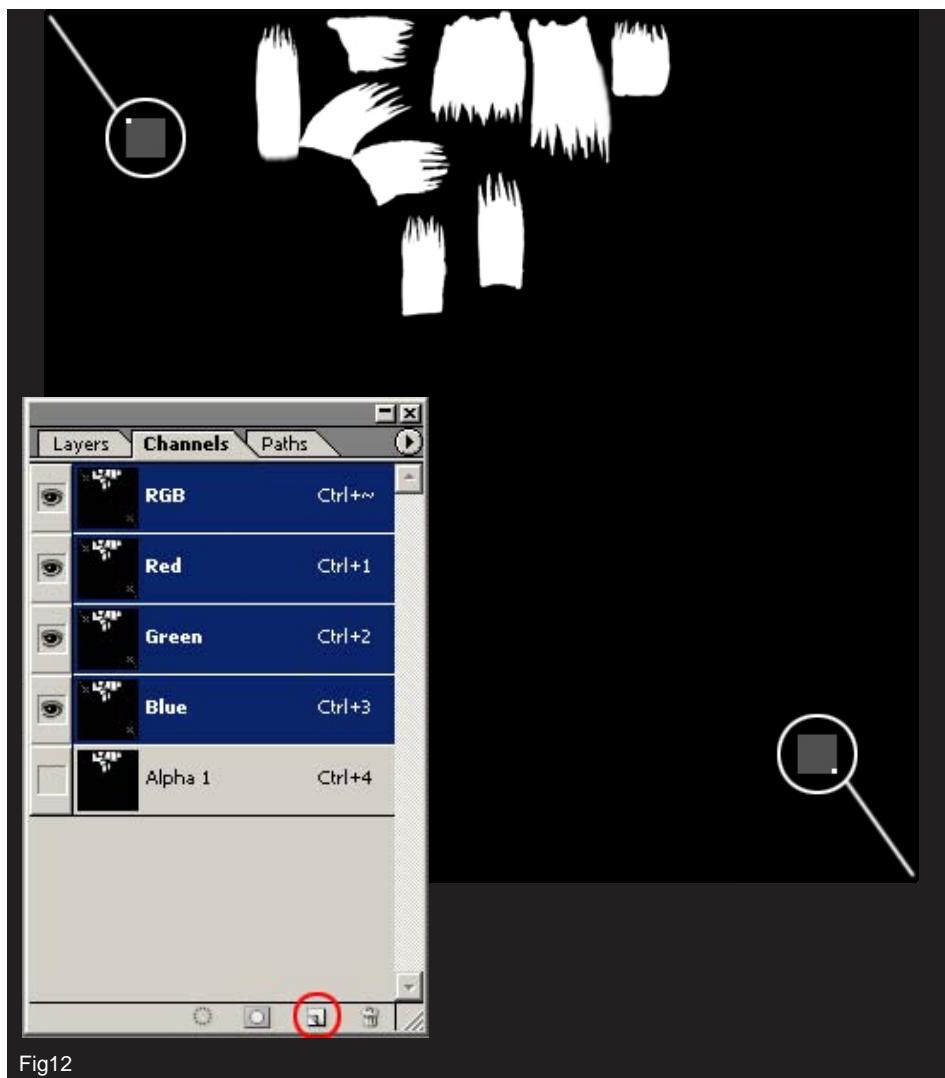


Fig12

11. With the face and body sections well underway, it is a good time to make a start on the hair. This will utilise an alpha channel which shall be used to control the opacity within Cinema4D in order that we can identify hair strands. What I do here is to create a new layer which I call 'Hair alpha' and I use a pure white colour and paint in the hair strands, as seen in Fig.11. We shall then copy this entire layer and paste it into a new Channels layer.

12. Select the Channels tab and click on the small icon ringed in red in Fig.12a. This will create a new channel that is called 'Alpha 1' by default. Now, before we paste our hair outline into this new channel, zoom in on two opposite corners and paint in a 1x1 pixel square, as seen in Fig.12. This will not effect the texture as the two squares are outside the mapping co-ordinates but will ensure that the hair shapes remain in exactly the same positions when they are pasted.



13. Copy hair alpha into the Alpha 1 and then save out the image as a 32 bit tga which will retain the alpha channel. In Cinema4D, create a new material (name it "hair") and then load the tga into Colour Channel and into Alpha Channel, as seen in Fig13. In the Alpha channel, click on the Select slot (left of figure) to choose the Layerset, as shown on the right of the figure. The last thing to do is to apply the new material to the hair, so proceed in this way. Select all the poly's that make up the body and save this selection. Go now in the texture tag of the body and, in the Selection slot, type the name of the selection of the body. In this way the texture will be applied only on the body. Now assign the hair material to the object. You'll notice that white areas should remain visible and the surrounding black areas should become invisible.

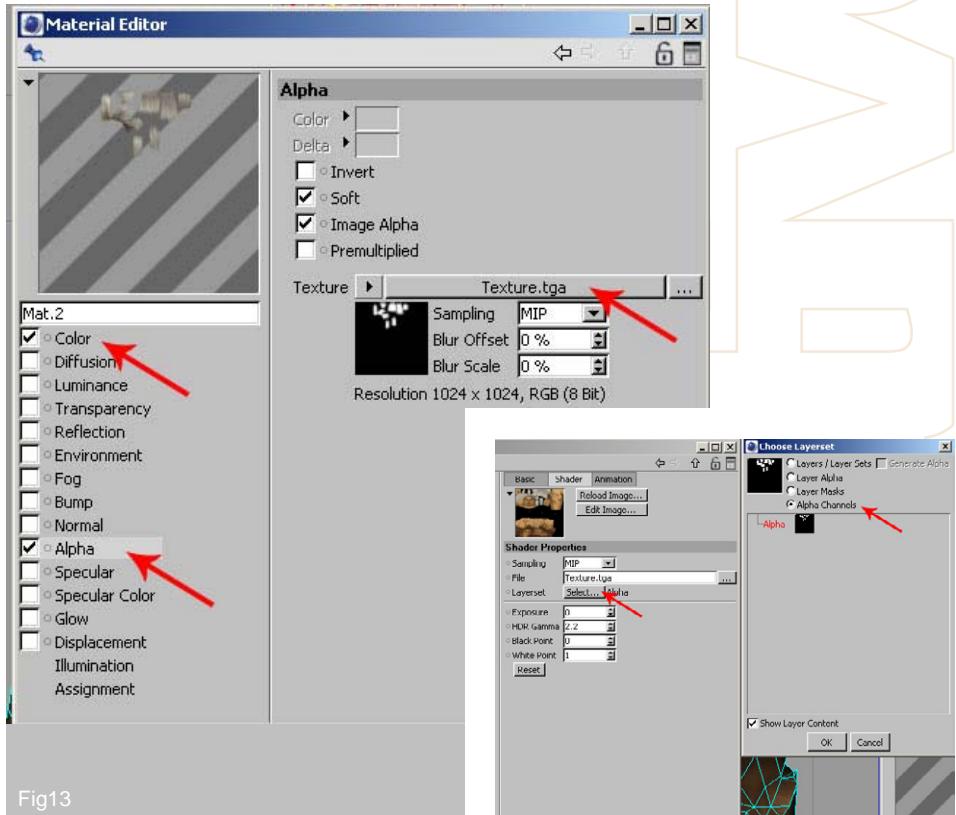


Fig13

14. In Fig.14, the white areas will be the hair which we will see but the grey boundaries of the poly's will disappear in the final render.

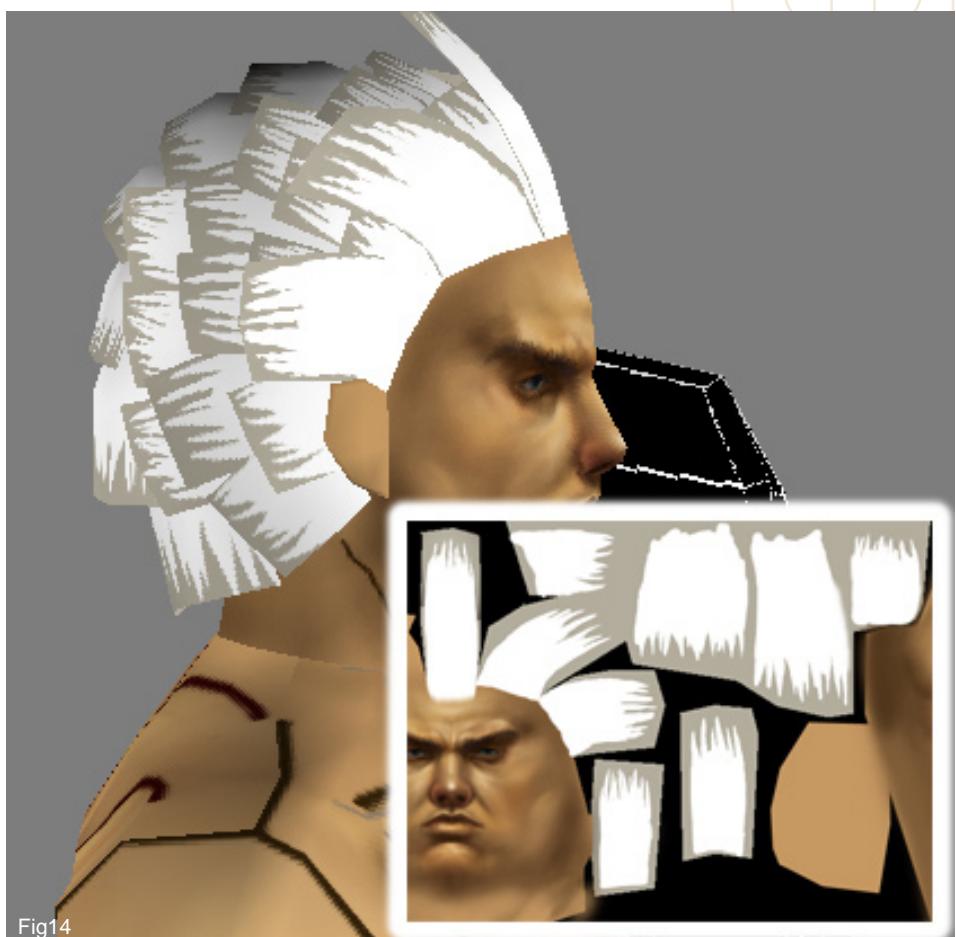


Fig14



15. Now that we have the outline of the hair, we can begin painting within the alpha areas on a new layer. Use a mid to light grey, similar to the colours seen in Fig.15, making sure to keep the roots slightly darker. To help these blend in with the scalp I have used a grey colour across the top of the head also. Do not forget to also blend the hairline in along the top of the face.

16. When all is done and applied to our model it should look something like Fig.16. There are a few areas that could be refined somewhat but you get the general idea hopefully.



17. When we apply our texture so far to the model you may notice that there are a few areas along the seam lines that do not match up very successfully. It is a good idea to create a new guideline layer to establish which edges are adjacent on the model. Try painting different coloured lines and matching them up along certain edges, as seen in Fig.17. You can see that the black and orange lines on the body are joined with the top seam of the arm in the upper right, and so on. What you need to do now is to make sure that the RGB values along the corresponding edges are similar and have a relative variation on each poly.

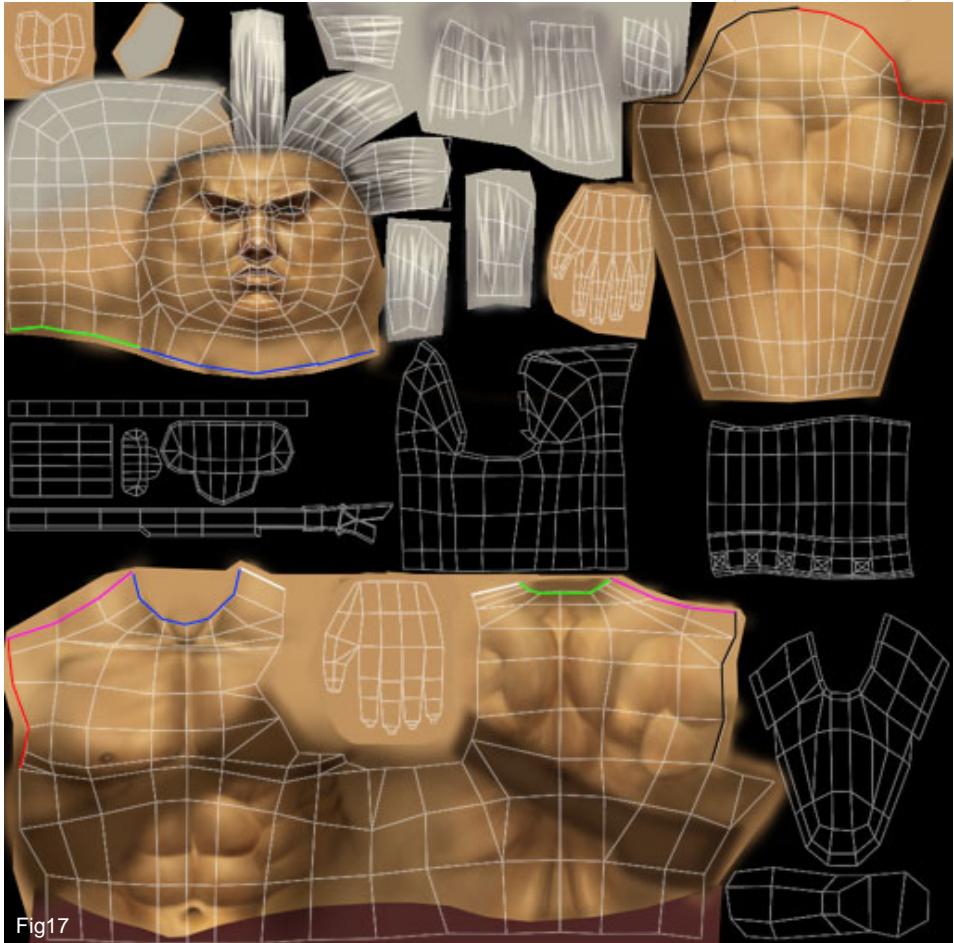


Fig17

18. In Fig.18, you can see the seam problems around the top of the arm on the left side of the image where the edges do not match. On the right side is the revised version, which shows an improvement. This just about concludes the most crucial stages of texturing the skin areas and hopefully gives you a good picture of how to go about structuring your PSD file into key components. All that is left are the ear and hand, which are predominantly done using methods already outlined. The hair could be tweaked to a degree to improve the look, but you should be armed with enough knowledge to try your hand at painting a texture from scratch. Next month will see the conclusion of this Swordmaster tutorial when we will tackle the armour and clothing.

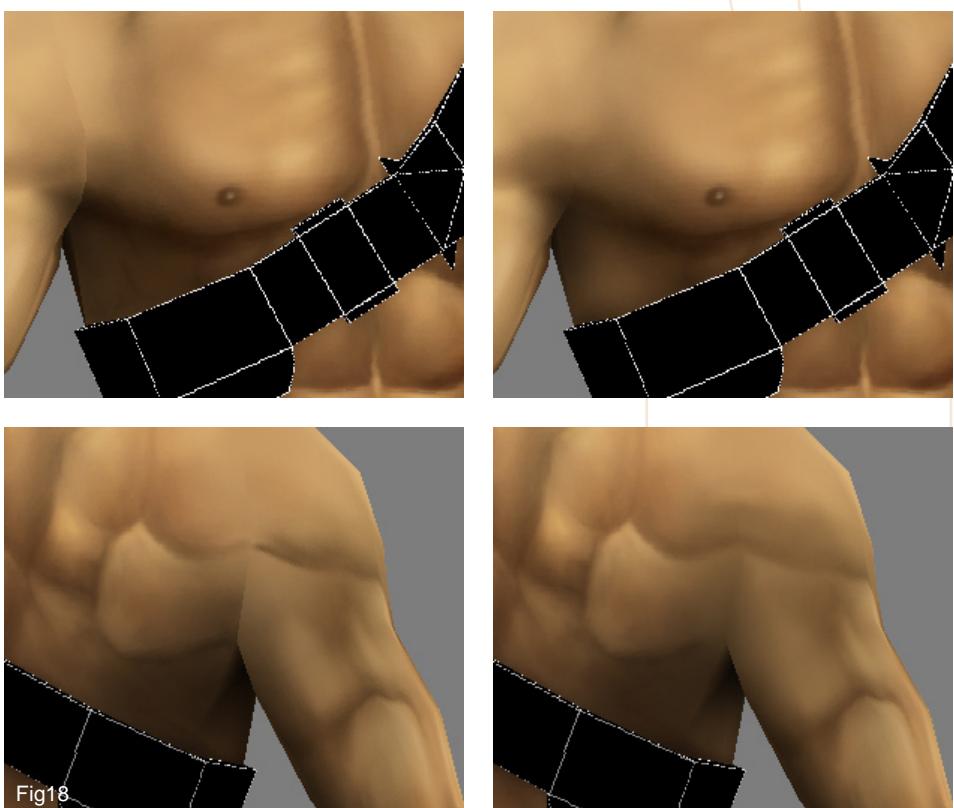
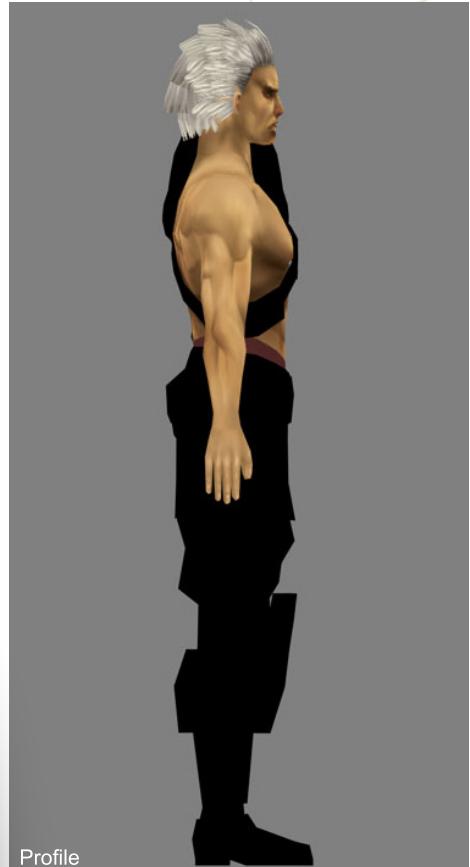


Fig18



SwordMaster



Tutorial By :

GIUSEPPE GUGLIELMUCCI,

NIKI BARTUCCI

niki@pikoandniki.com

[www.pikoandniki.com](http://www.pikoandniki.com)

& RICHARD TILBURY

rich@3dtotal.com

The 'Swordmaster'

character was originally created by

SEONG-WHA JEONG

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Is our new precise, step by step tutorial for a highly polished, low polygon game character with detailed texturing for real-time rendering.

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Issue 015 November 06

TEXTURING THE SKIN & BODY

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TEXTURING THE ARMOUR &  
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## PART 7

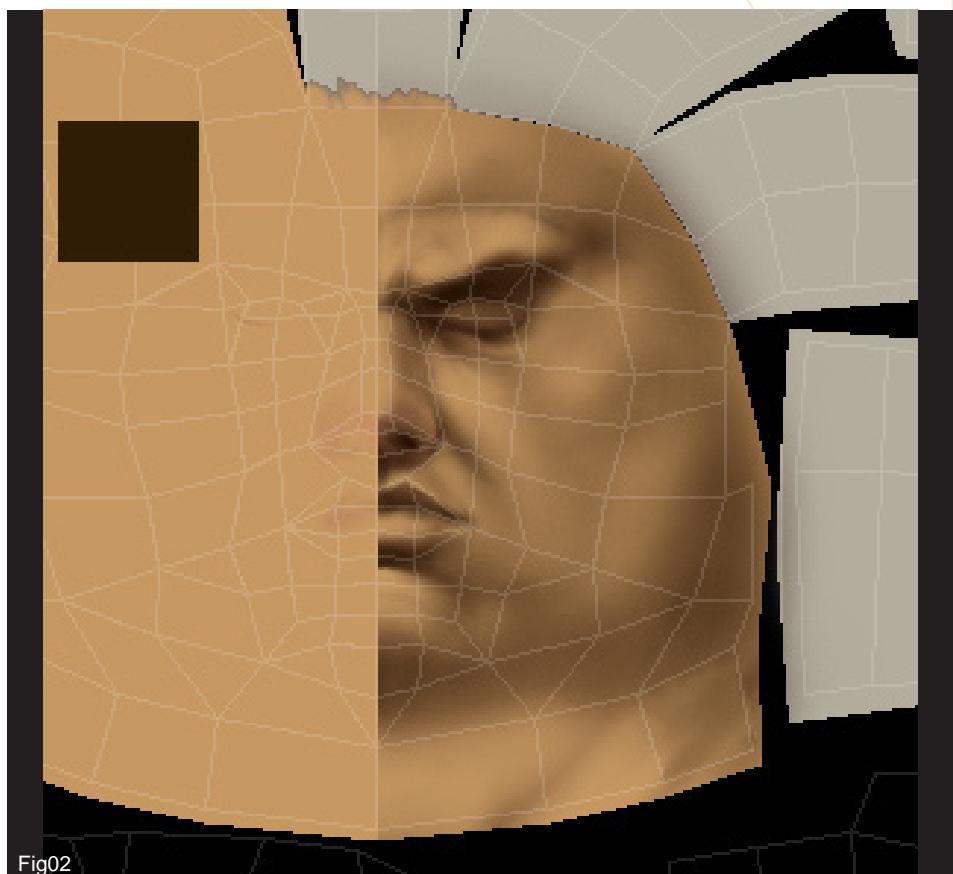
# TEXTURING SKIN AND HAIR

### INTRODUCTION:

Hello and welcome to the Seventh instalment of the Swordmaster tutorial. In this part, we have finally reached the last stage of the tutorial – Texturing. In this part you will not be held by the hand and most of the things you are going to do are just shown for your reference and guidance. I will break the texture down into the key components and talk a little about how to structure your PSD file and organise the various levels so that changes can be made quickly and easily.

1. The first thing to establish are the colour blocks which will show the key areas of our template – in this case the skin tone which will be done using an RGB value of 198, 152, 98. This is placed over the body, arm and head, as seen in Fig.1. Create these on a separate layer and name it so it is easily recognisable. You will also notice that I have blocked in the hair colour (R179, G173, B157). The remaining areas comprise of the armoured arm and boots which we shall ignore for now.

2. Now, create another new layer which we will use as our shadow layer and will contain all the shading for the skin. This is perhaps the most important layer of all in that it defines the muscle groups more clearly than any other. This layer is set to Multiply as a blending mode and uses various shades of a single colour (R47, G29, B5) as seen by the small square inset in the top left in Fig.2.



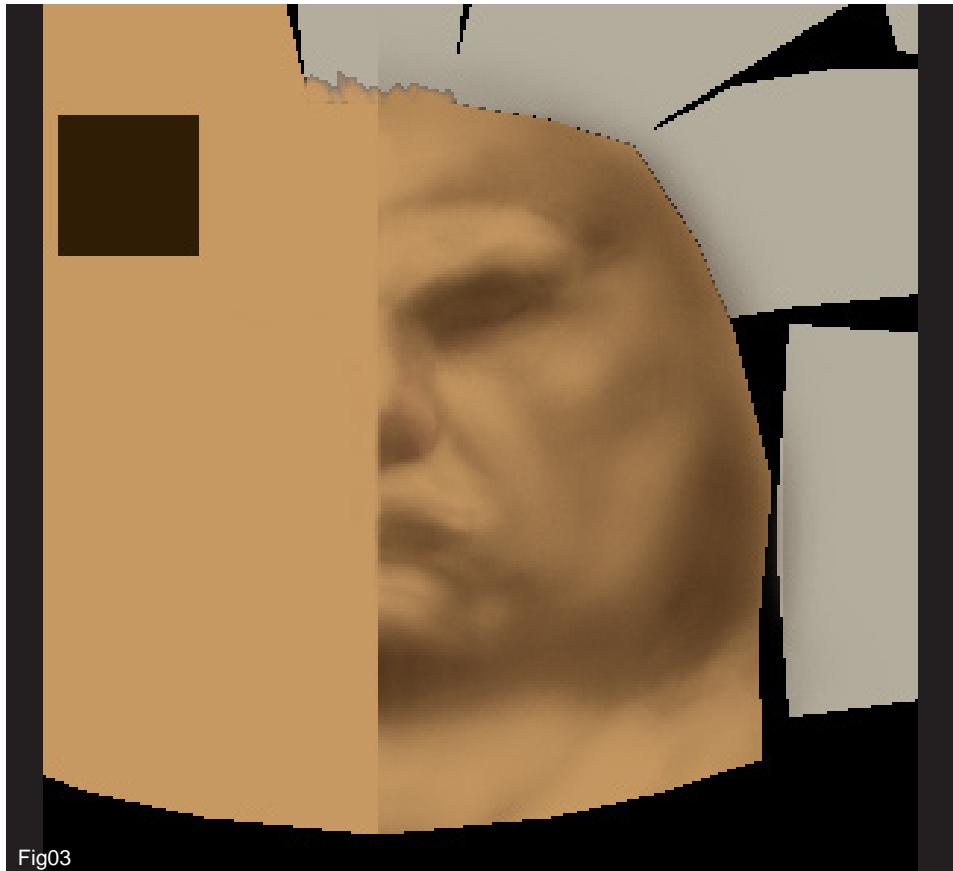
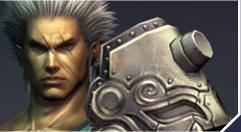


Fig03

3. First of all, concentrate on only one half of the face, as we can copy this over when it is finished. Choose a standard soft round airbrush with a pixel width of around 30 and carefully paint in the general areas of shadow, without worrying too much about detail (Fig.3).



Fig03a

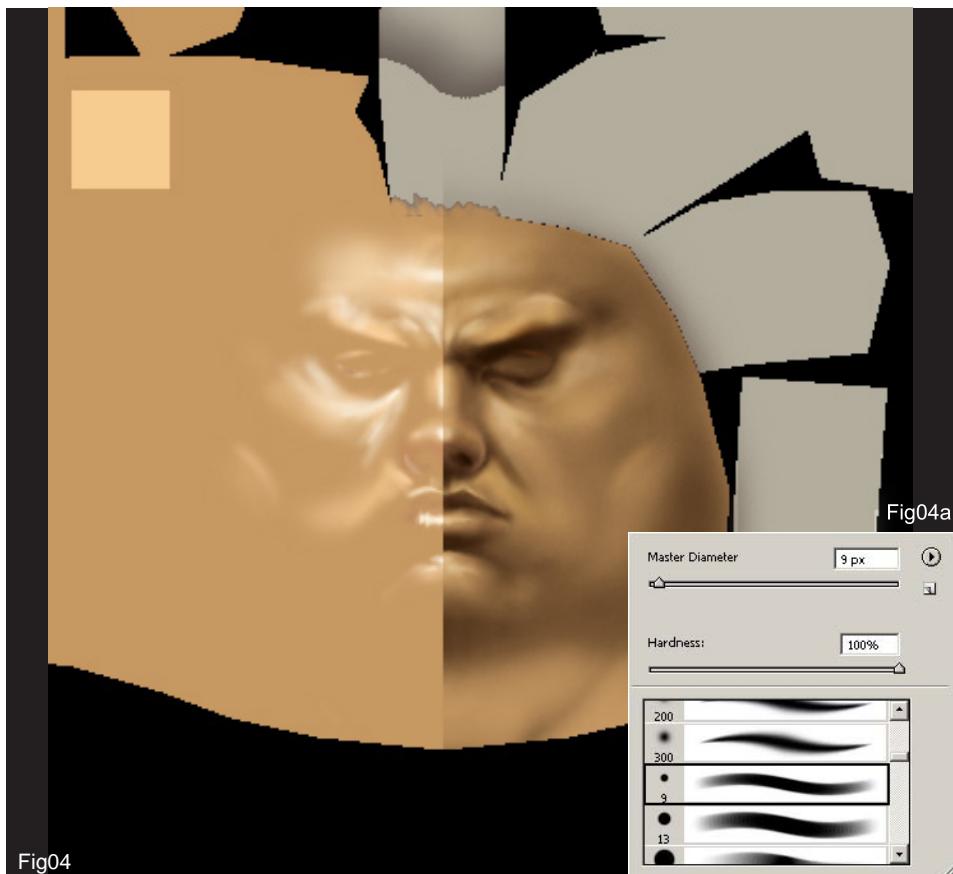
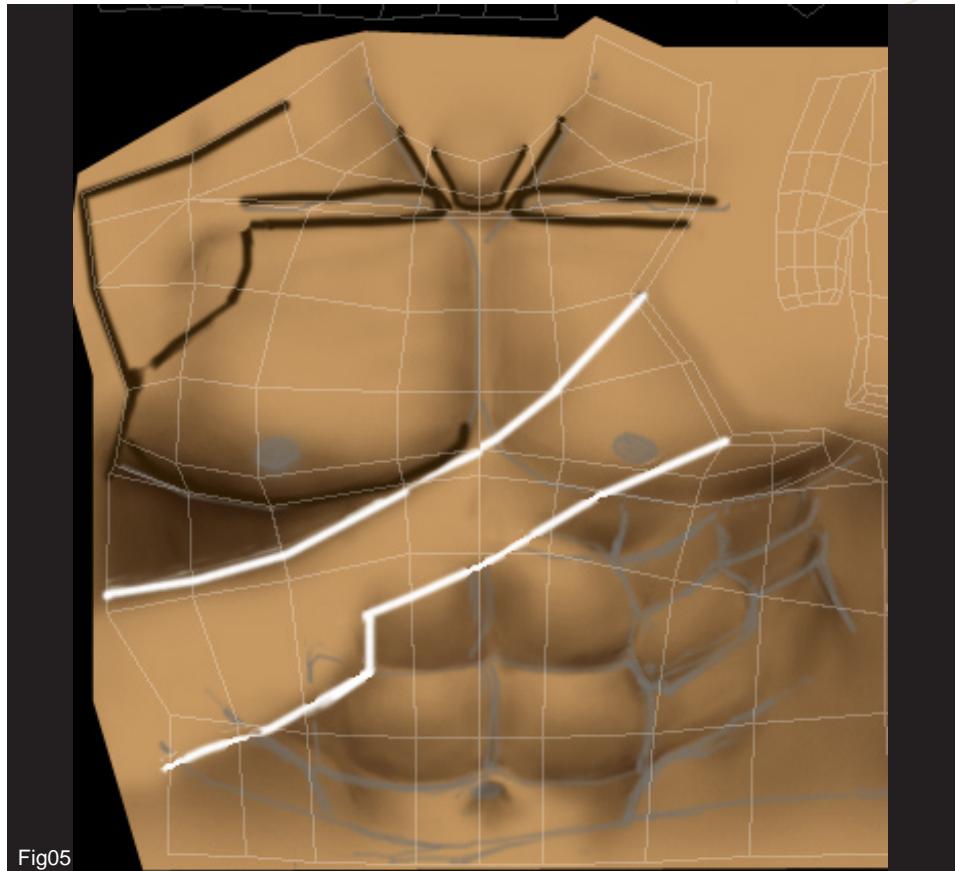


Fig04

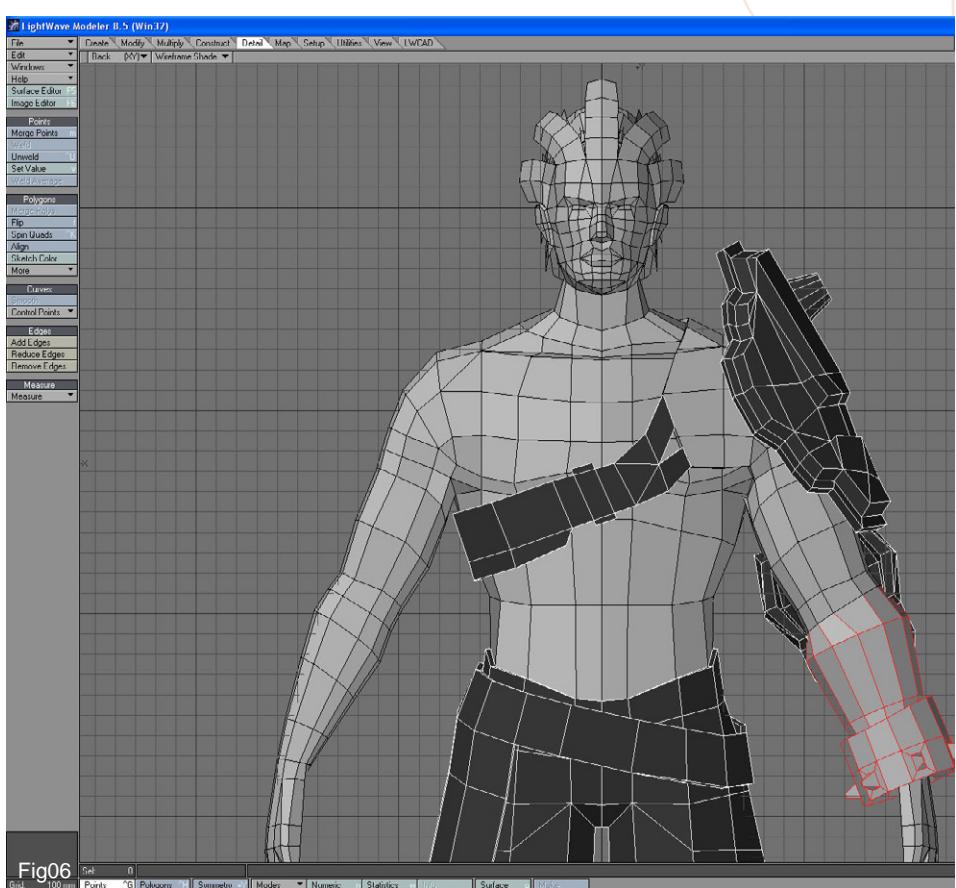
4. You can alter the opacity and flow values of the brush along the toolbar to help control the strokes and, when you are happy, then select a hard-edged airbrush (Fig.4a) to refine the detail so that it looks similar to Fig. 2. Remember to use only one colour for all of the shading and keep it on a single layer. Now that the face has a shadow layer intact it is time to add another layer, this time dedicated to highlights. I chose an initial pale yellow as shown by the square inset in the top left of Fig.4 and set the layer blending mode to Soft Light. I also used a near-white colour in a few areas to add the brightest highlights. On the right of the face is the final version and on the left is the layer set to Normal blending mode and without any shadows so you can see more clearly where it is placed. When painting textures for low poly characters, try and imagine that there is a soft ambient light above the character, as if they are outside. This helps the eye read the forms better and generally creates a more realistic lighting solution.



5. With the head area well underway, it is a good time to start on the body section. The same principles apply for all the skin sections. Start with the shadows and then move onto the highlights layer. I also find that, to help get details in the correct areas, it is useful to create a new layer, which I call "Guidelines". On this layer I draw line configurations and then save out the image and load it onto the model. This enables me to see where to paint in certain parts of the texture, as seen in Fig.5. I have used a white line to depict the area covered by the armour strap and also drawn in the abdominal muscles before starting on any shading.



6. To help get the armour strap in the right place, simply look at a front view of the character in Modeler and use the wireframe as a guide (Fig.06).



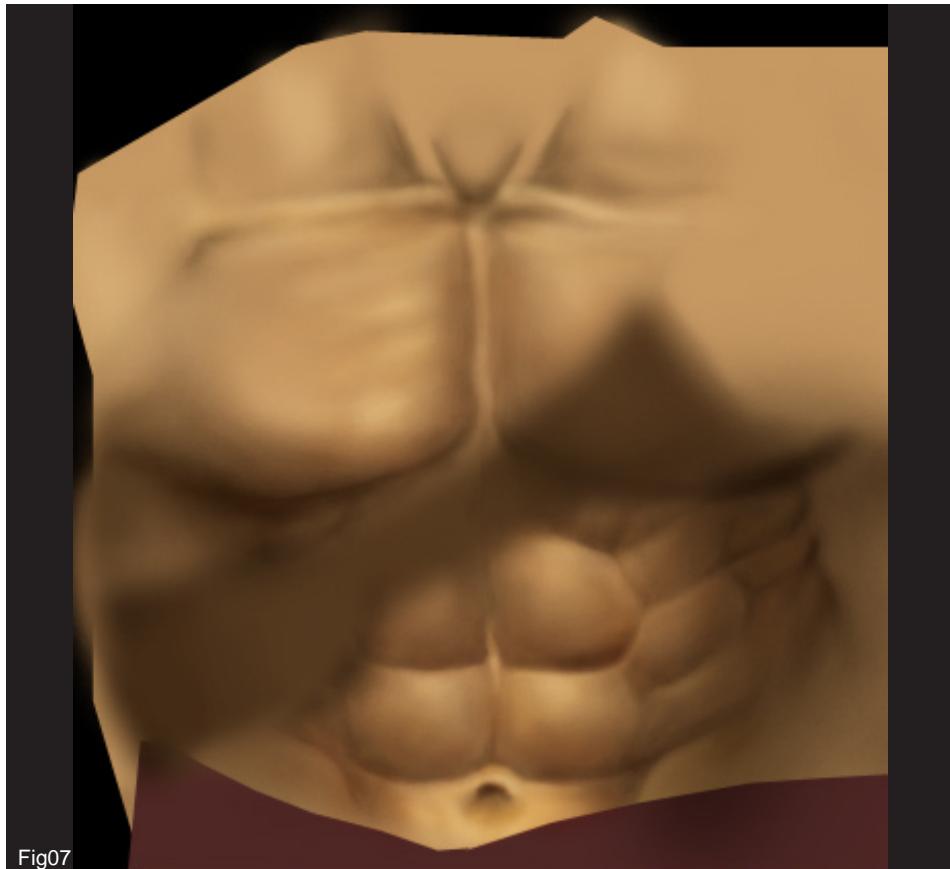


Fig07

7. When you have finished the shading on the torso, use the guideline to paint in a shaded area that follows the strap on a separate layer which will help bind it to the body (Fig.07). You will also need to repeat this for the back section of the character too. Use the same colour as the shadow layer and set the blending mode to 'Multiply' to keep things consistent.

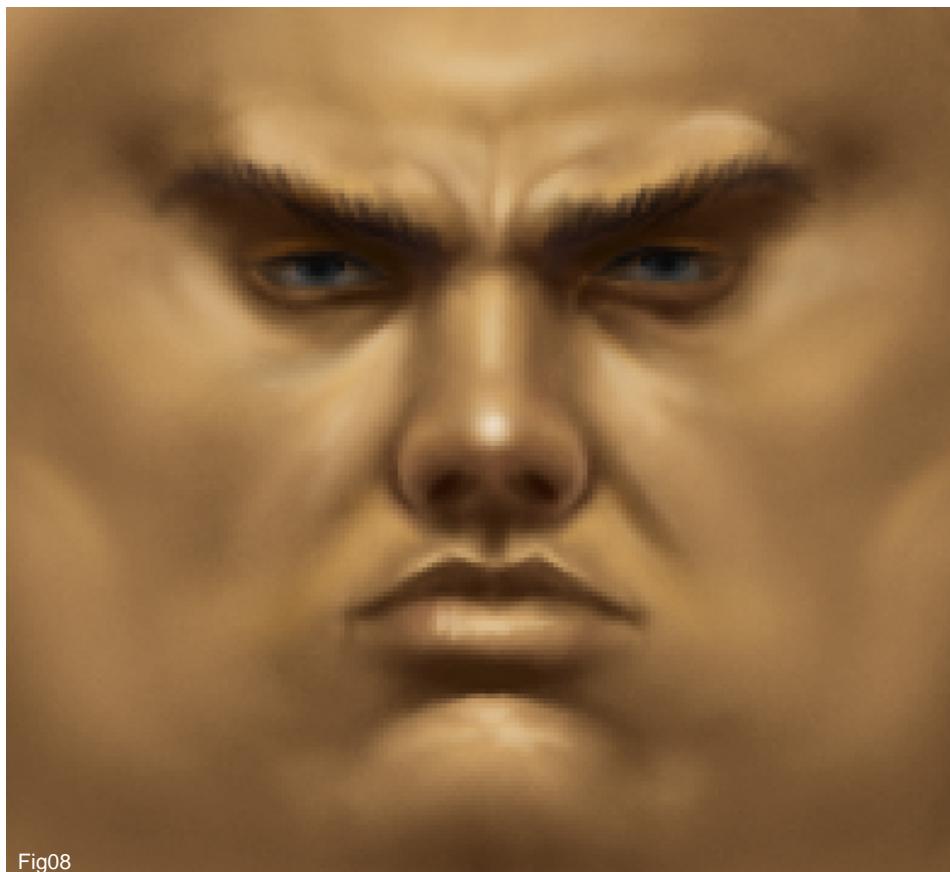
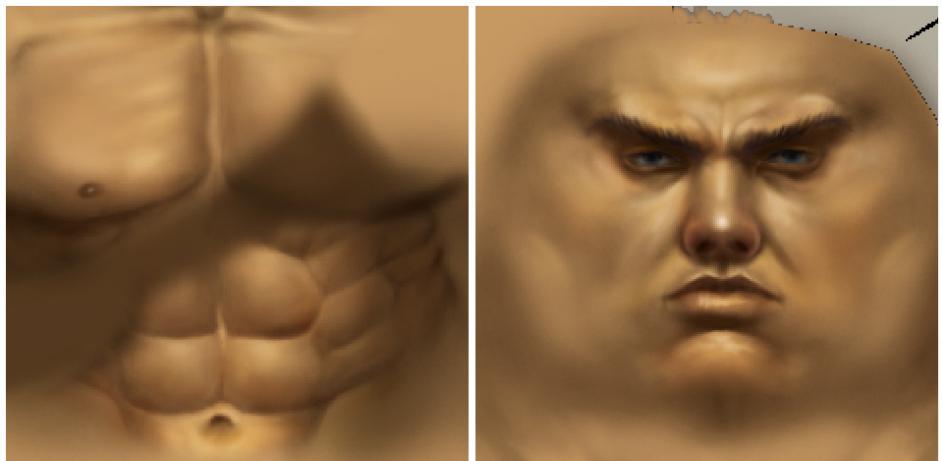


Fig08

8. We have covered the crucial stages of painting the skin but we are yet to add in the details which we shall yet again do on a new layer. In this part of the tutorial we will deal only with the eyes, eyebrows and nipples. There are no special techniques here, just careful painting using a small standard airbrush. In Fig.08, you can see a close-up of the eyes and eyebrows. I have chosen blue as a colour but the important thing to remember is that they do not appear too bright and feel very much as though they are sunk in the head and in shadow. I also added a small highlight on the tip of the nose to help distinguish it.



9. Now add a further layer and set it to Soft Light (I named mine 'colour tints'), and, using a purple colour similar to the small inset in Fig.09, begin adding some colour variation across some of the body and face. Be sure to keep away from the seams and do not overdo it – you will notice I have concentrated around the eyes and nose on the face with small patches on the chin and cheeks too. This will help break up the monochromatic quality and create some interest across the areas of skin.



Soft Light



Fig09

10. With regards to the arm and back section of the model, I suggest you always start on the guidelines layer and draw in the shapes of the muscle groups and then save out an image to test the accuracy on your actual mesh, before embarking on any significant detail and shading. This is essentially trial and error and will mean many changes and test renders before you are confident in painting in the main shadows and highlights that will define the form (Fig.10).

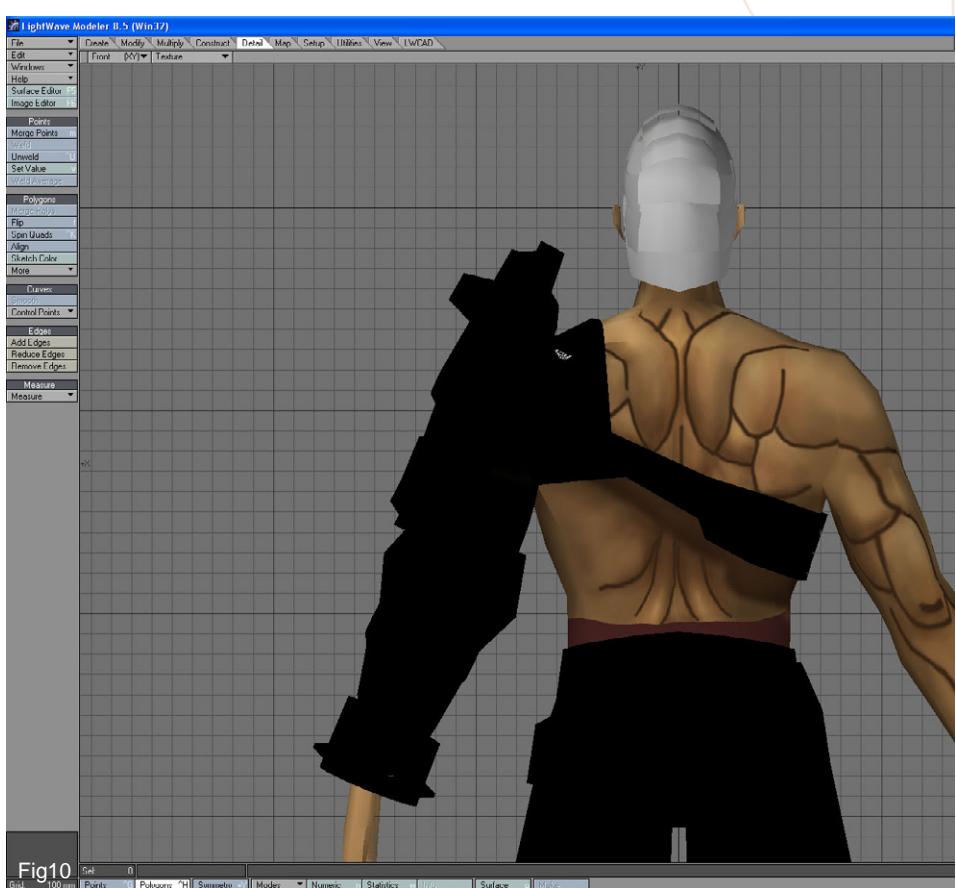


Fig10

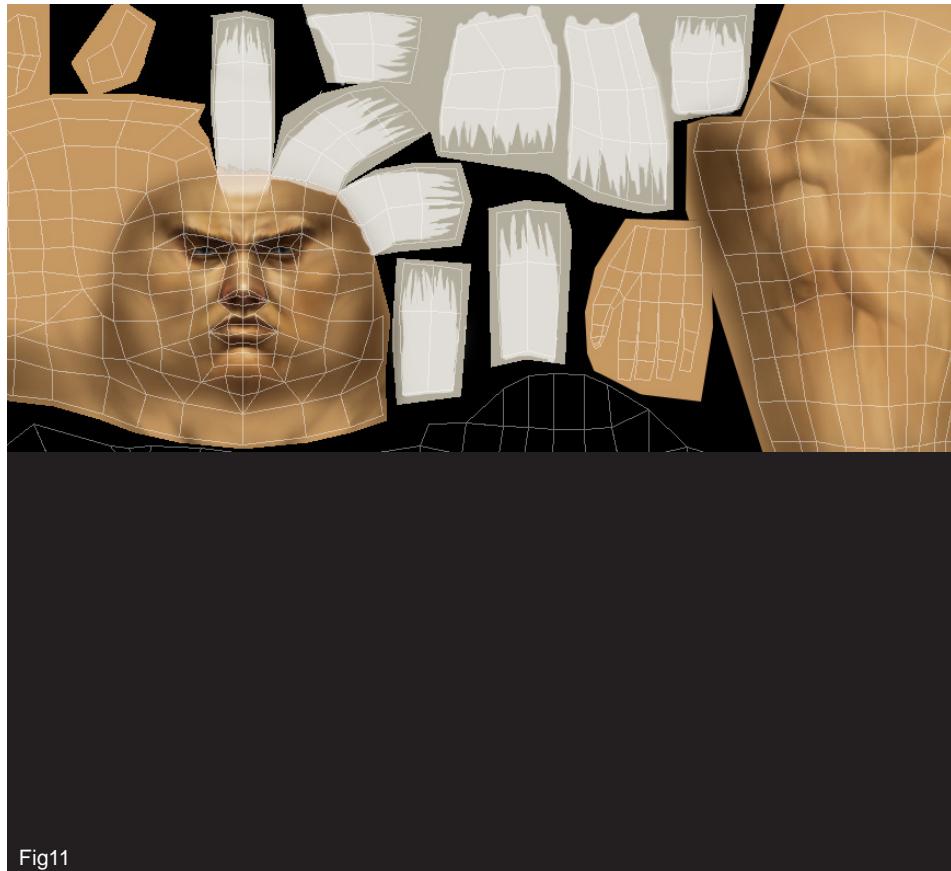


Fig11

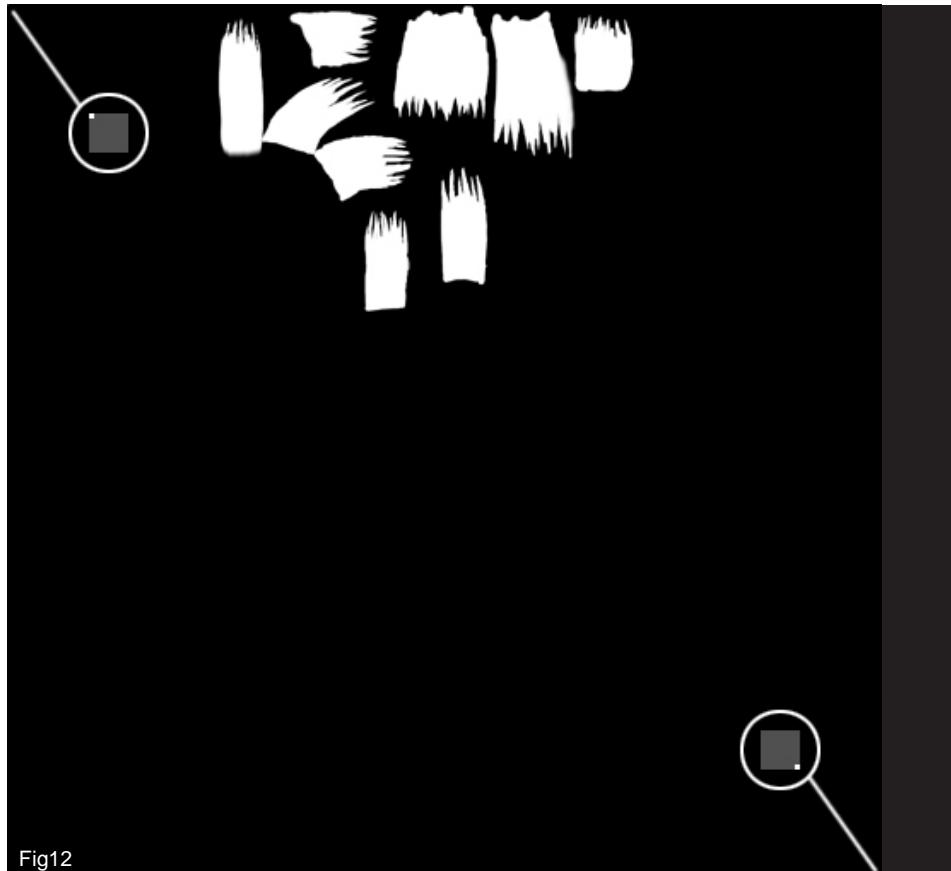


Fig12

11. With the face and body sections well underway it is a good time to make a start on the hair. This will utilise an alpha channel which shall be used to control the opacity within Lightwave in order that we can identify hair strands. What I do here is create a new layer which I call 'Hair alpha' and I use a pure white colour and paint in the hair strands, as seen in Fig.11. We shall then copy this entire layer and paste it into a new Channels layer.

12. Select the Channels tab and click on the small icon ringed in red in Fig.12a. This will create a new channel that is called 'Alpha 1' by default. Now, before we paste our hair outline into this new channel, zoom in on two opposite corners and paint in a 1x1 pixel square, as seen in Fig.12. This will not effect the texture as the two squares are outside the mapping co-ordinates but will ensure that the hair shapes remain in exactly the same positions when they are pasted.



13. Save the black and white alpha image as a separate greyscale, or 24-bit, map (give it a name something like 'Texture\_alpha.tga'). In Modeller, select all hair polygons and give them a separate surface name. Open up Surface Editor and copy the texture settings from Swordmaster to Swordmaster\_Hair surface. Click the T box next to Transparency channel, add layer, set Layer Type to Image Map, Projection to UV, SwordmasterUV for UVMap and Texture\_alpha.tga for Image. Right click to copy this layer and paste it above texture layer in the colour channel. Make sure Invert Layer is now off. This way you can always swap hair colour and boundaries simply by turning off and on colour layers.

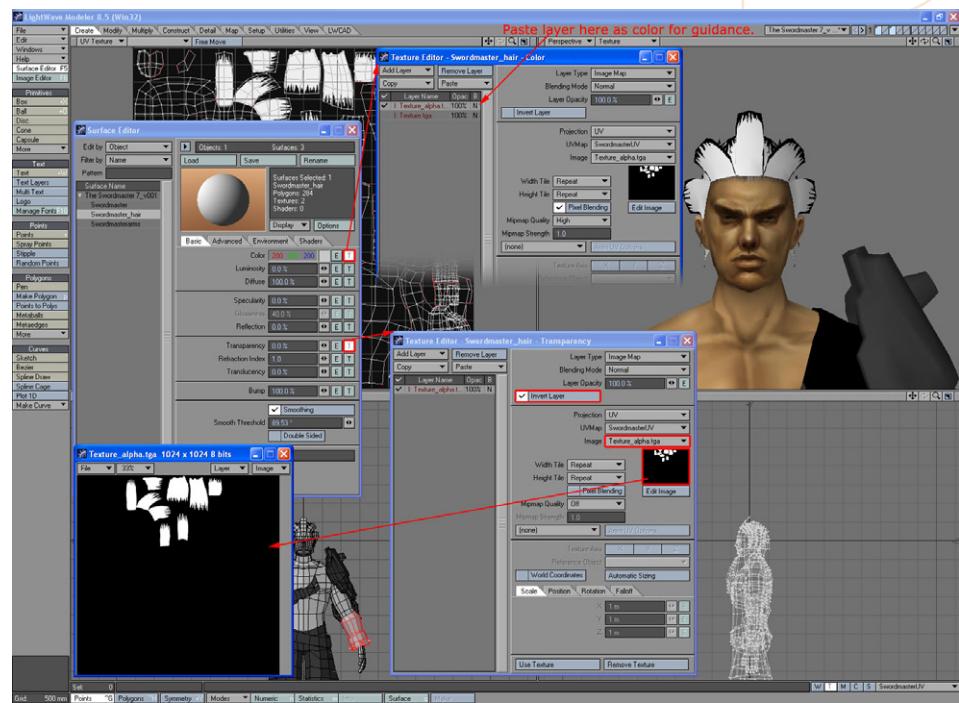


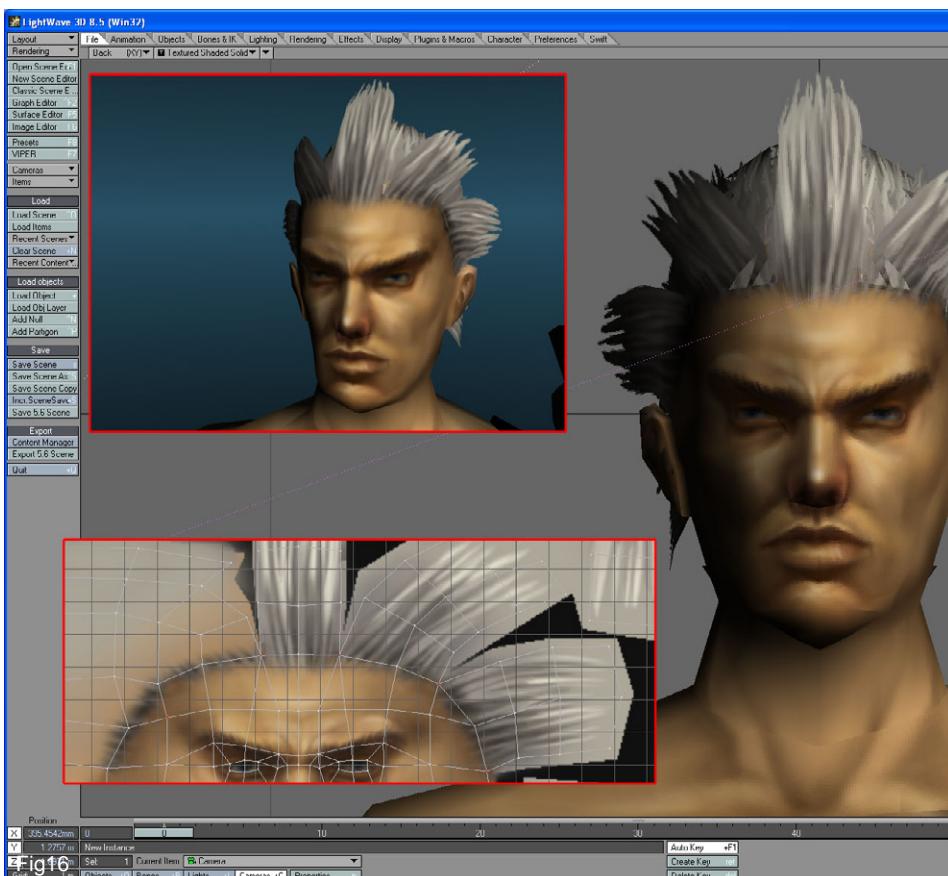
Fig13

14. Transparency cannot be seen in Modeller due to it's OpenGL capabilities. However, if you send model to Layout and render it you'll see that the hair is transparent at its end. Layout has the ability to show transparency maps, but in order to see it you must open up the Display Preferences window and turn on OpenGL Textures, OpenGL Transparency, OpenGL Multi-Texturing and the Colour and Transparency Channel.



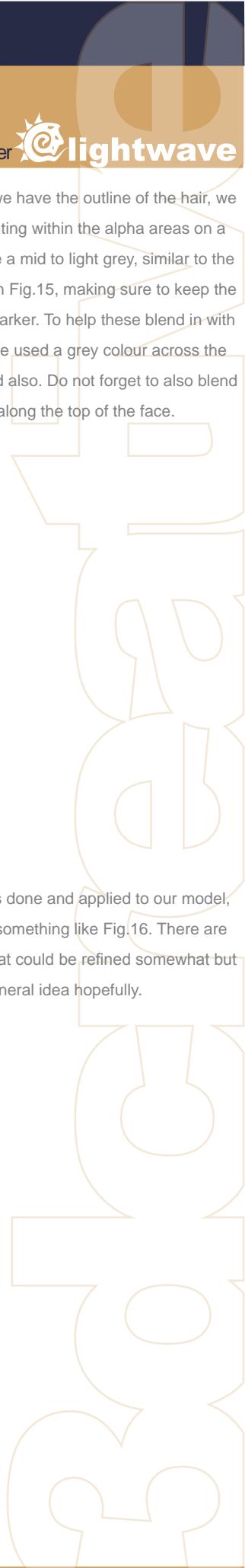


Fig15



15. Now that we have the outline of the hair, we can begin painting within the alpha areas on a new layer. Use a mid to light grey, similar to the colours seen in Fig.15, making sure to keep the roots slightly darker. To help these blend in with the scalp I have used a grey colour across the top of the head also. Do not forget to also blend the hairline in along the top of the face.

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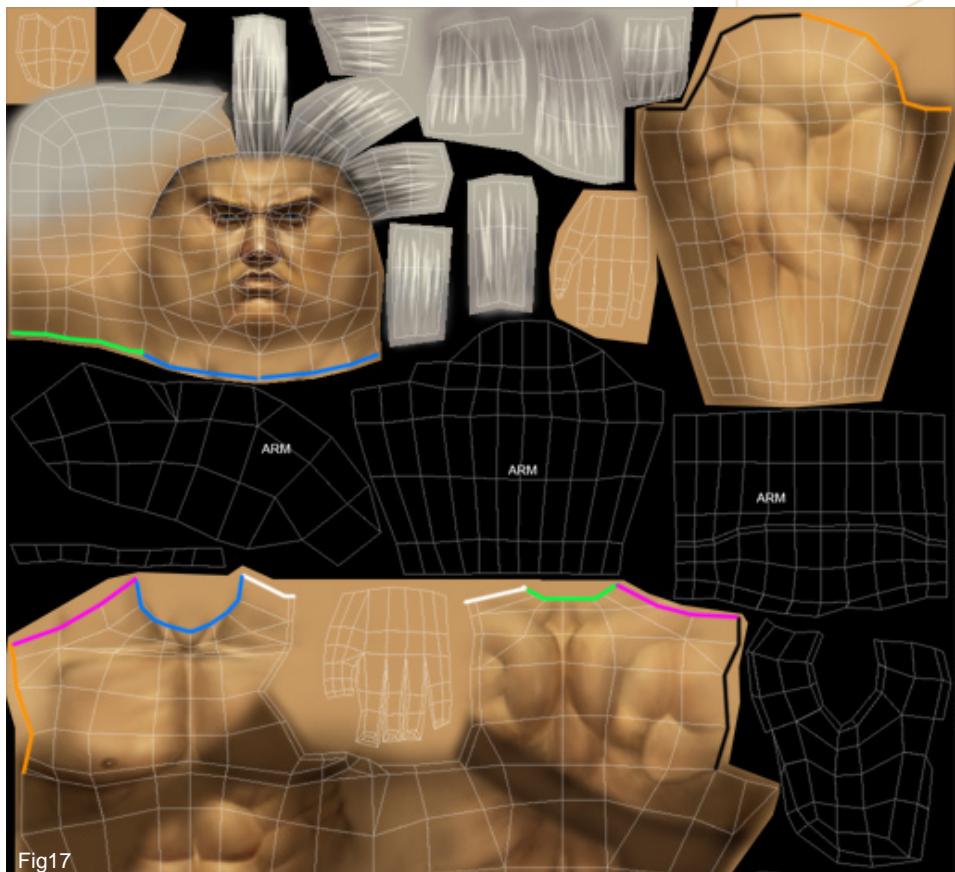


Fig17

18. In Fig.18, you can see the seam problems around the top of the arm on the left side of the image, where the edges do not match. On the right side is the revised version, which shows an improvement. This just about concludes the most crucial stages of texturing the skin areas and hopefully gives you a good picture of how to go about structuring your PSD file into key components. All that is left are the ear and hand which are predominantly done using methods already outlined. The hair could be tweaked to a degree to improve the look but you should be armed with enough knowledge to try your hand at painting a texture from scratch. Next month will see the conclusion of this Swordmaster tutorial, when we tackle the armour and clothing.

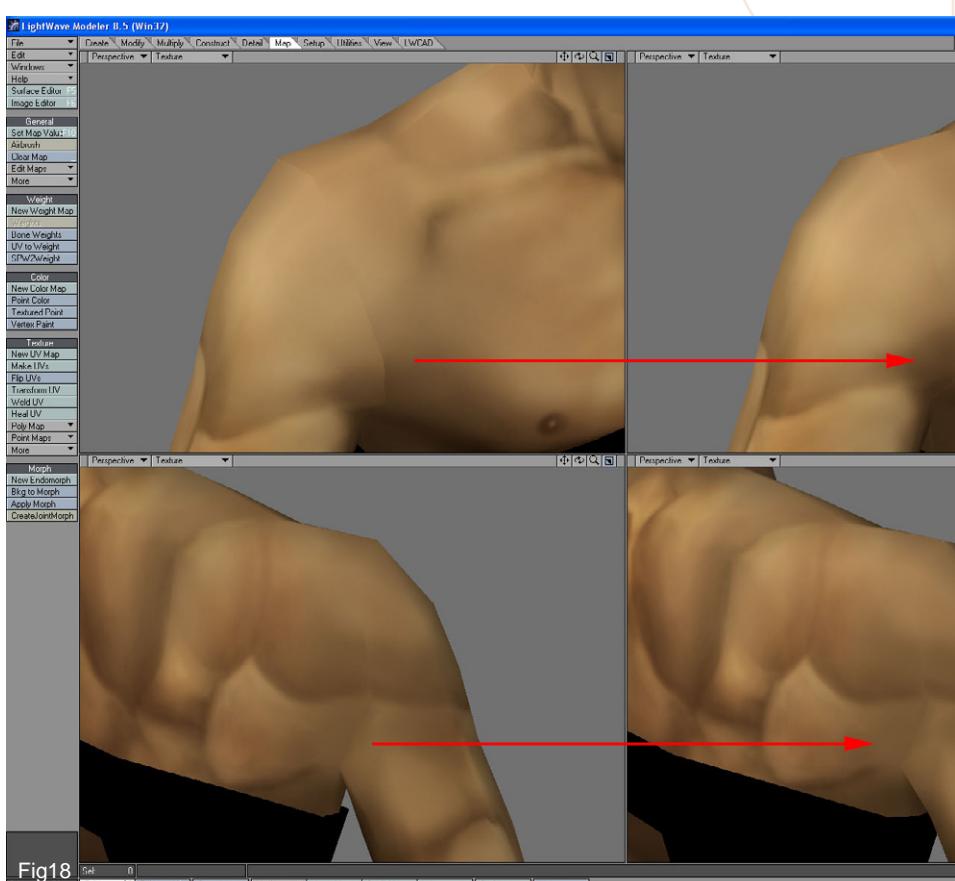


Fig18



Tutorial By :  
**VOJISLAV**  
**MILANOVICH**  
vojo@teol.net

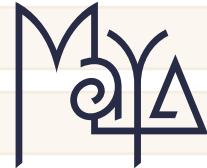
**RICHARD TILBURY**  
rich@3dtotal.com

The 'Swordmaster'  
character was originally created by

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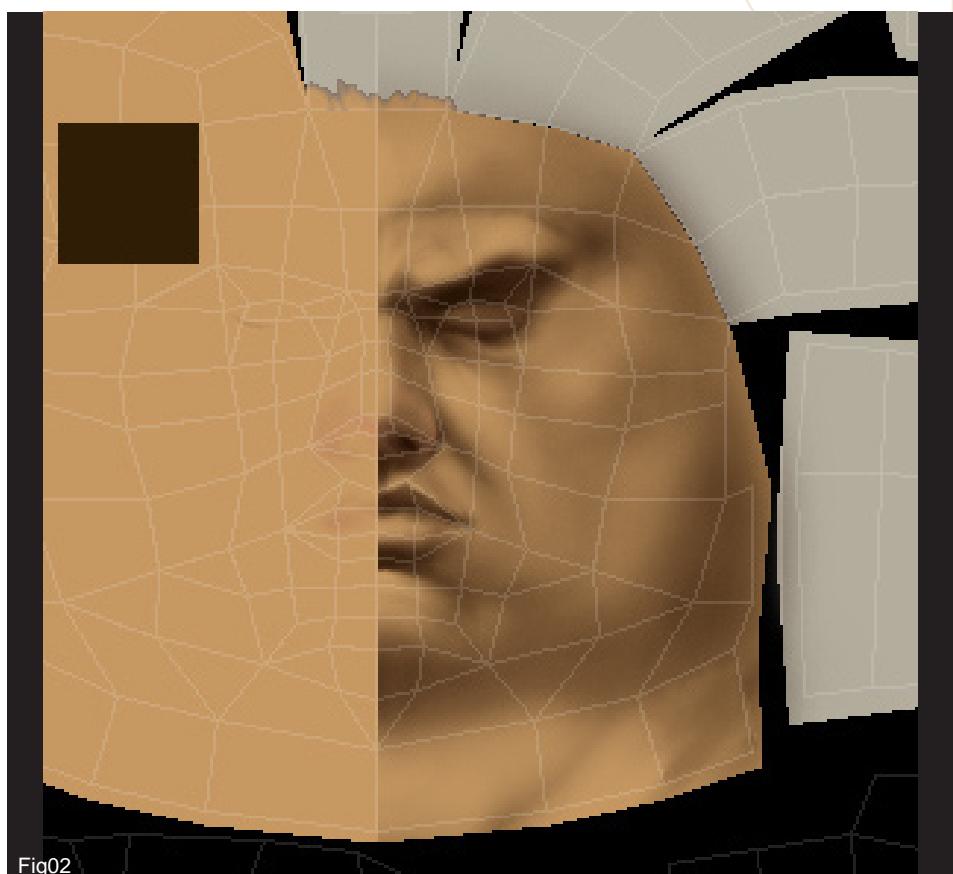
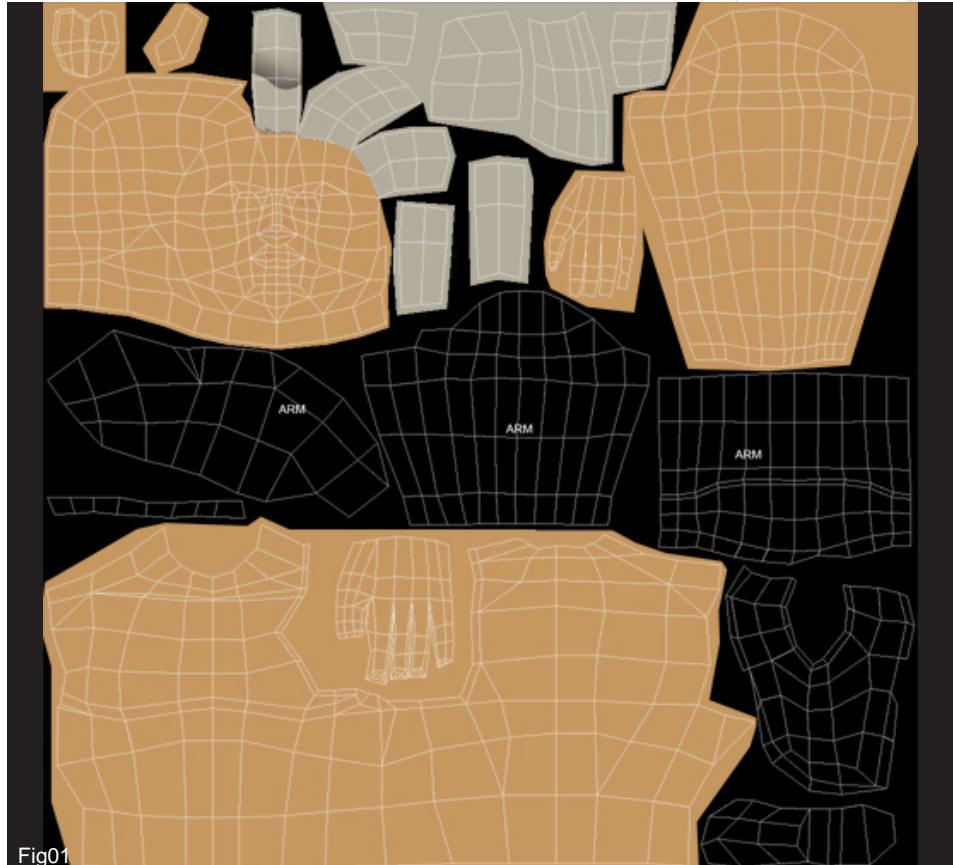
## PART 7 TEXTURING SKIN & HAIR

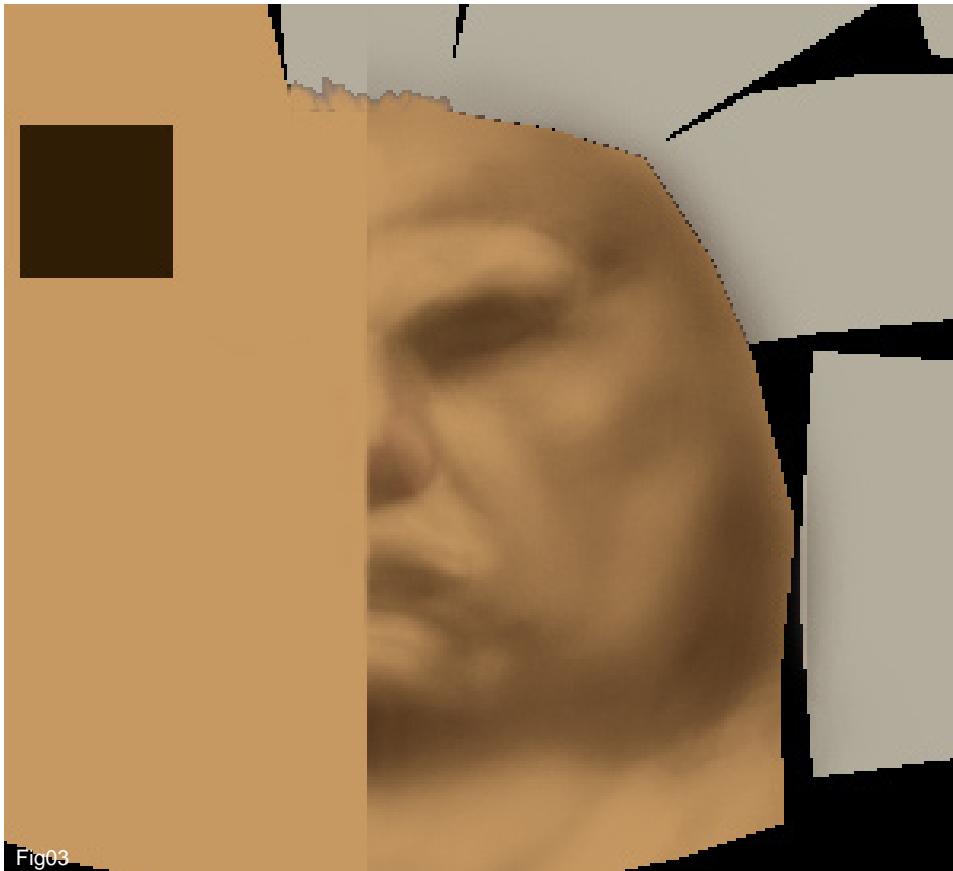
### INTRODUCTION

Well, we have at last reached the final stages of our tutorial: Texturing. This is perhaps the only part of the exercise where you will not be held by the hand throughout the process. I can only really point you in the right direction but the final texture must be created by you as the steps involved are far too numerous to detail here. I will break the texture down into the key components and talk a little about how to structure your PSD file and organise the various levels so that changes can be made quickly and easily.

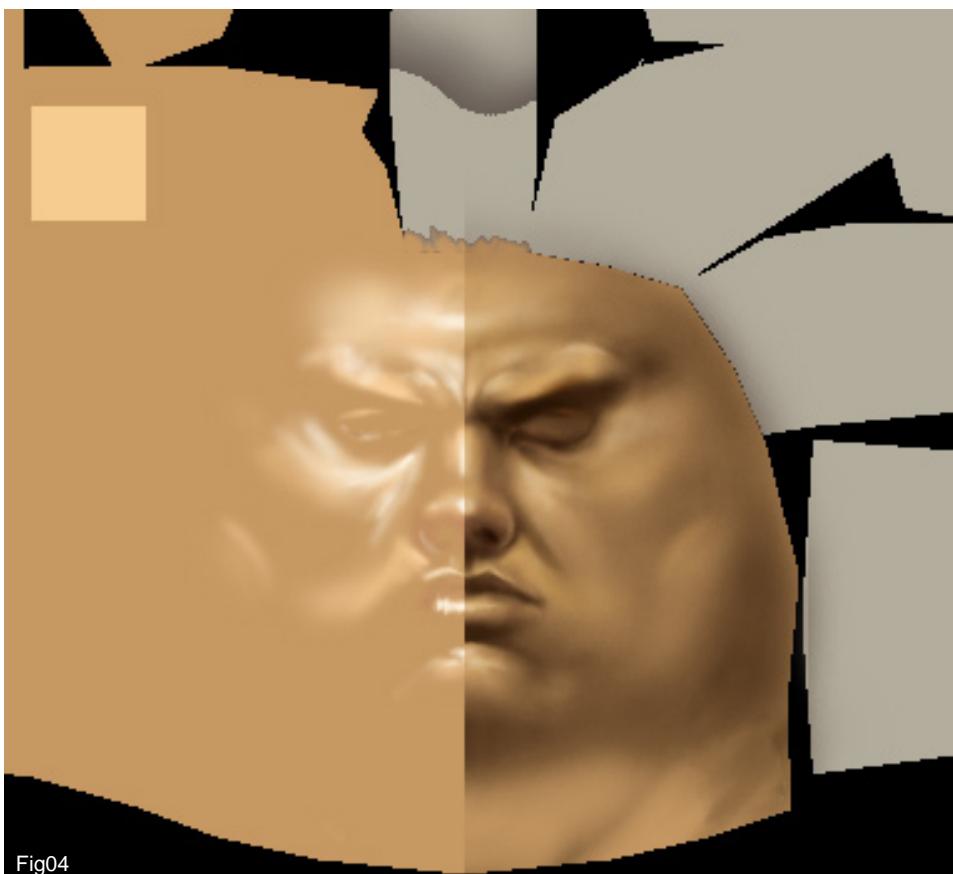
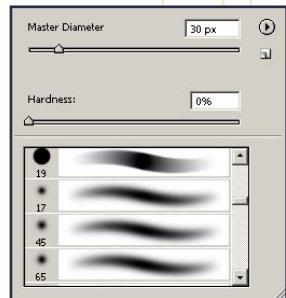
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2. Now, create another new layer which we will use as our shadow layer and contain all the shading for the skin. This is perhaps the most important layer of all in that it defines the muscle groups more clearly than any other. This layer is set to Multiply as a blending mode and uses various shades of a single colour (R47, G29, B5), as seen by the small square inset in the top left in Fig.2.

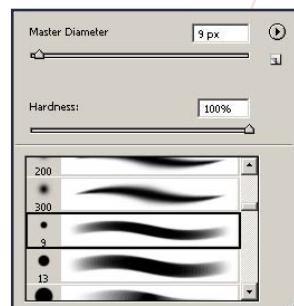



**Fig03**

3. First of all concentrate on only one half of the face as we can copy this over when it is finished. Choose a standard soft round airbrush with a pixel width of around 30 and carefully paint in the general areas of shadow without worrying too much about detail (Fig.3).


**Fig04**

4. You can alter the opacity and flow values of the brush along the toolbar to help control the strokes and, when you are happy, then select a hard-edged airbrush (Fig.4a) to refine the detail, so that it looks similar to Fig. 2. Remember to use only one colour for all of the shading and keep it on a single layer. Now that the face has a shadow layer intact, it is time to add another layer, this time dedicated to highlights. I chose an initial pale yellow, as shown by the square inset in the top left of Fig.4, and set the layer blending mode to Soft Light. I also used a near white colour in a few areas to add the brightest highlights. On the right of the face is the final version and on the left is the layer set to Normal blending mode and without any shadows so you can see more clearly where it is placed. When painting textures for low poly characters try and imagine that there is a soft ambient light above the character, as if they are outside. This



helps the eye read the forms better and generally creates a more realistic lighting solution.



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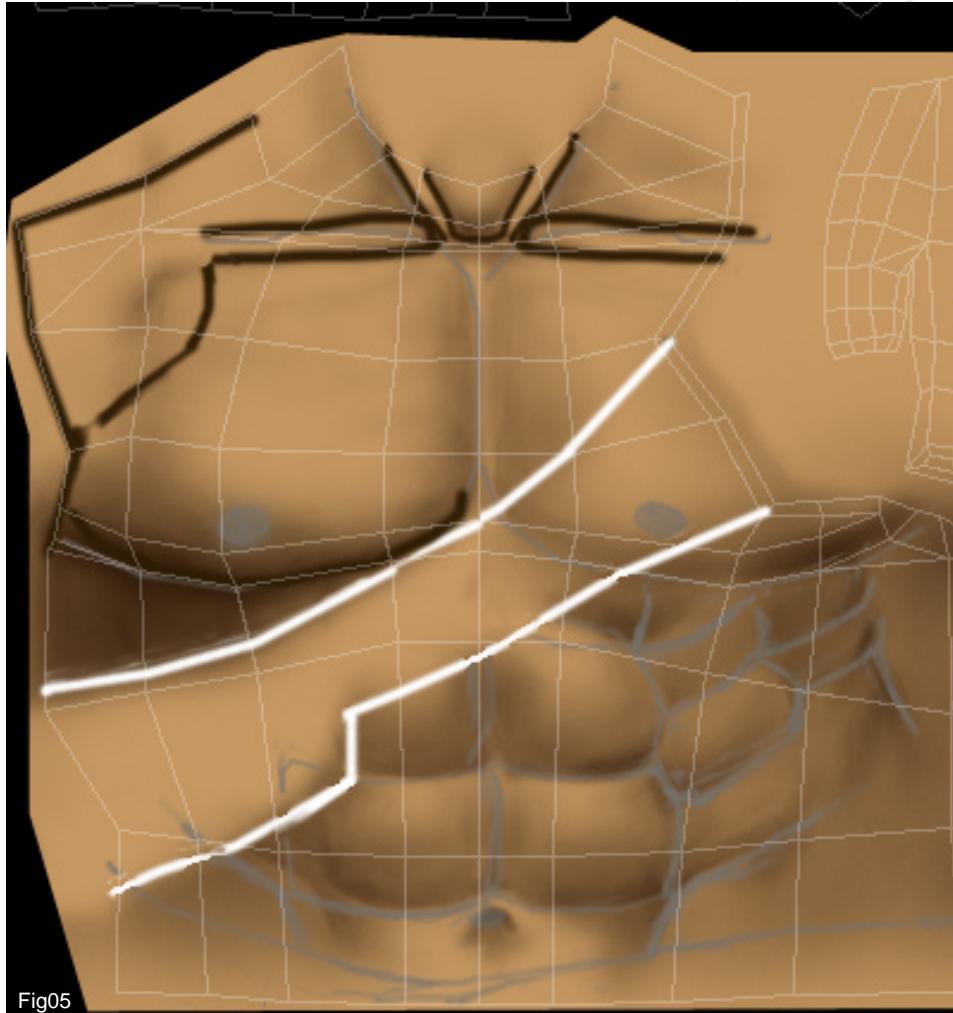


Fig 05

6. To help get the armour strap in the right place, simply look at a front view of the character in your 3d program and use the wireframe as a guide (Fig.06)

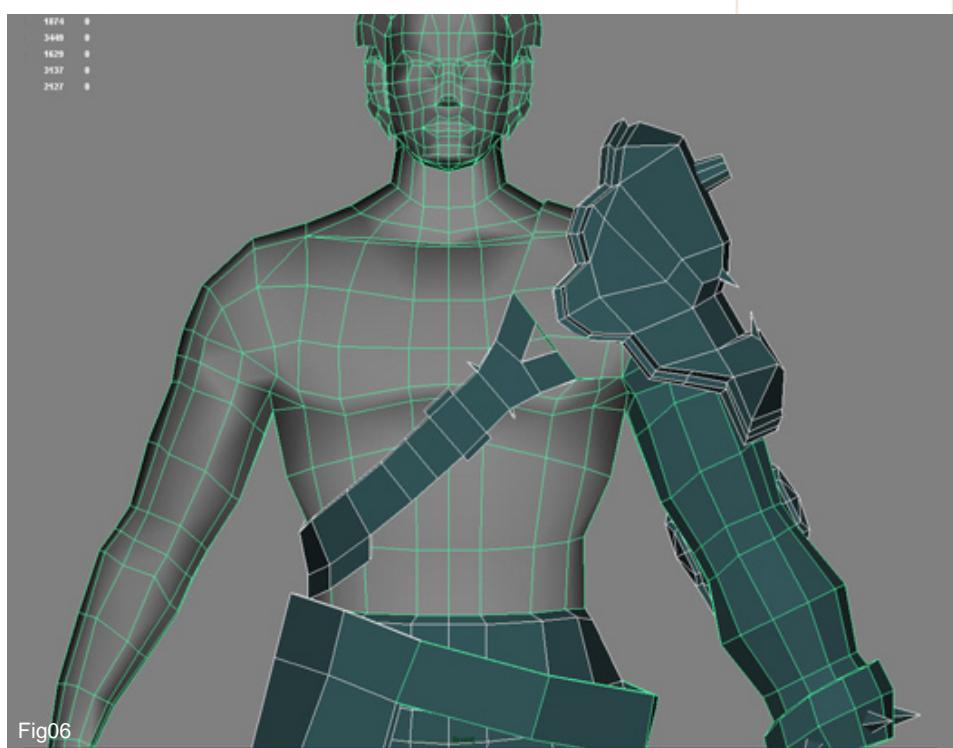
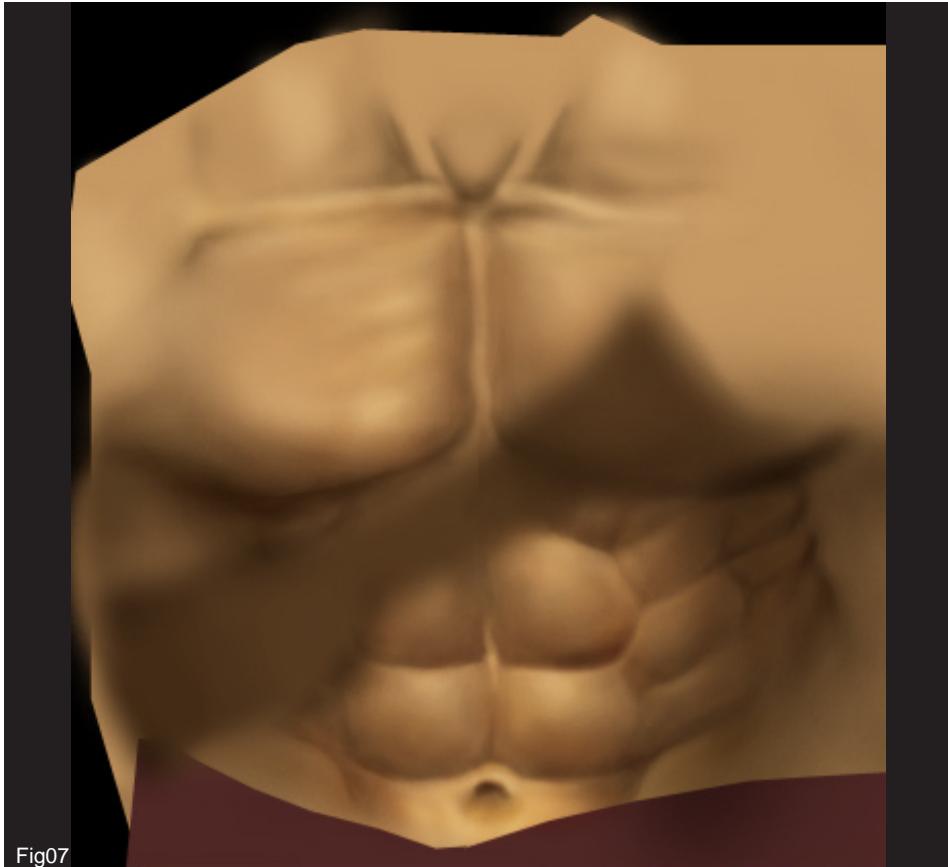
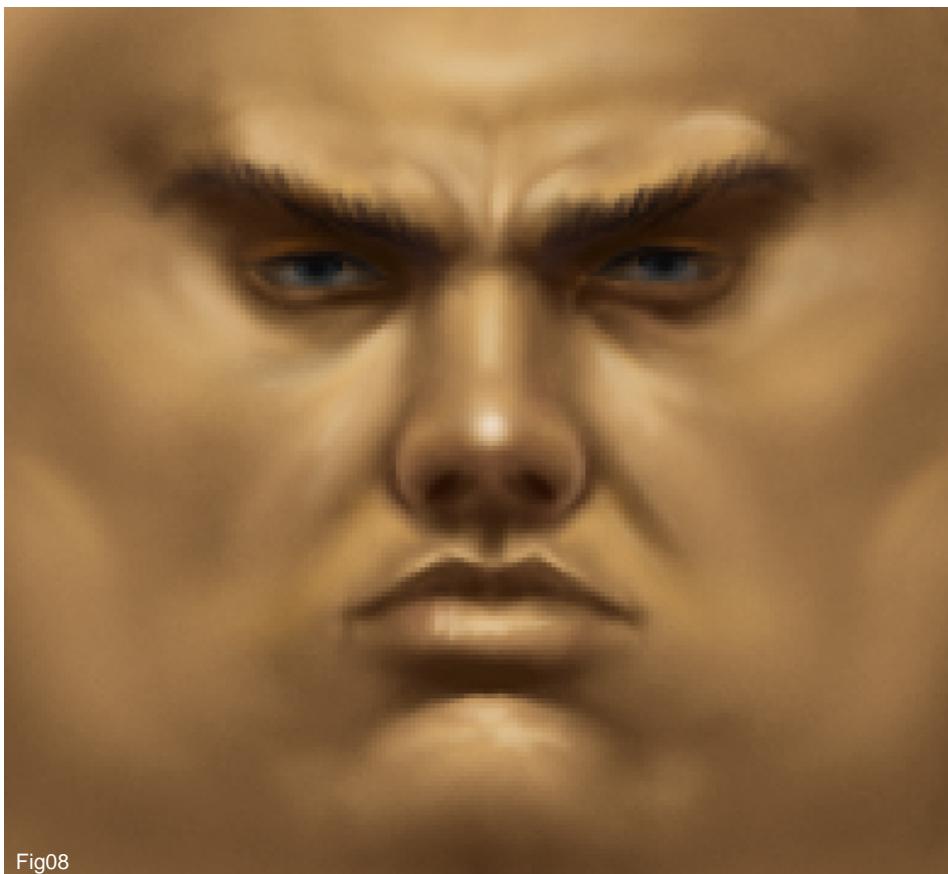


Fig 06



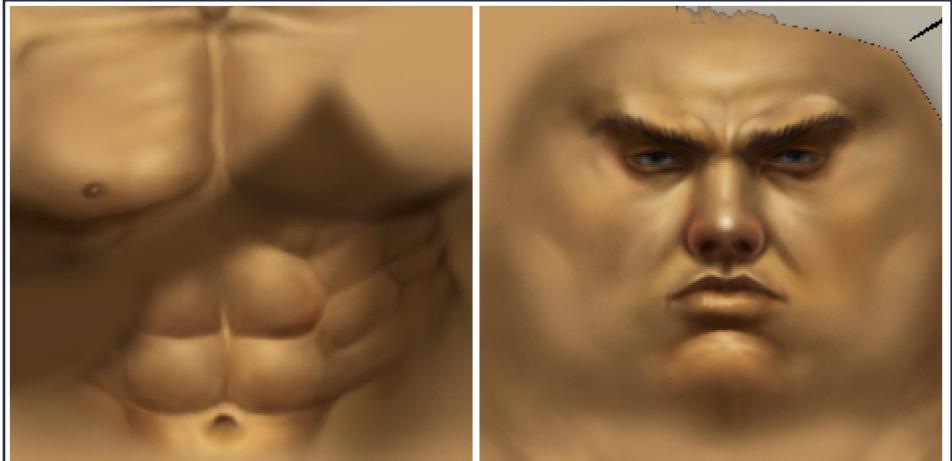
7. When you have finished the shading on the torso, use the guideline to paint in a shaded area, that follows the strap, on a separate layer which will help bind it to the body (Fig.07). You will also need to repeat this for the back section of the character too. Use the same colour as the shadow layer and set the blending mode to 'Multiply' to keep things consistent.



8. We have covered the crucial stages of painting the skin but we are yet to add in the details which we shall yet again do on a new layer. In this part of the tutorial we will deal only with the eyes, eyebrows and nipples. There are no special techniques here, just careful painting using a small standard airbrush. In Fig.08, you can see a close-up of the eyes and eyebrows. I have chosen blue as a colour but the important thing to remember is that they do not appear too bright and feel very much as though they are sunk in the head and in shadow. I also added a small highlight on the tip of the nose to help distinguish it.



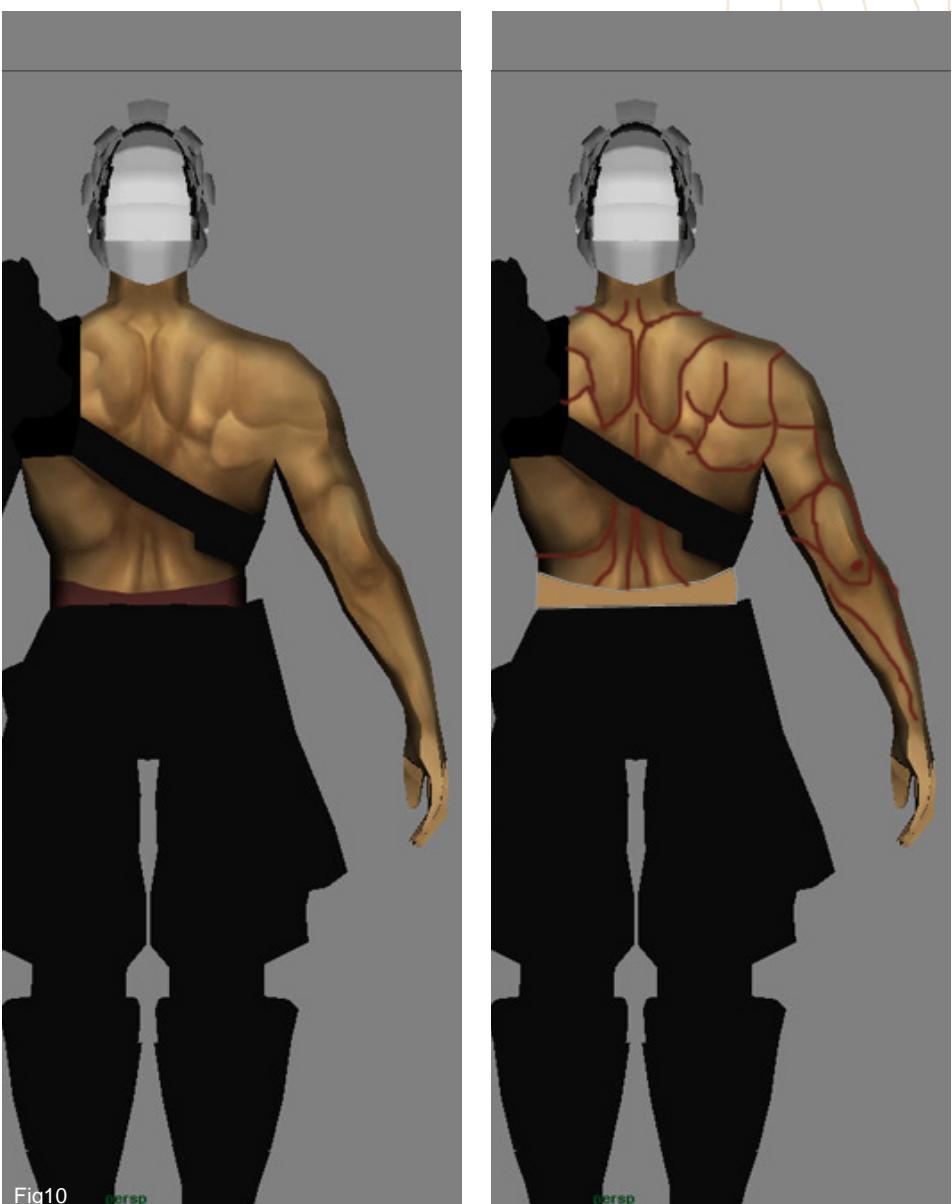
9. Now add a further layer and set it to Soft Light (I named mine 'colour tints'), and using a purple colour, similar to the small inset in Fig.09, begin adding some colour variation across some of the body and face. Be sure to keep away from the seams and do not overdo it – you will notice I have concentrated around the eyes and nose on the face with small patches on the chin and cheeks too. This will help break up the monochromatic quality and create some interest across the areas of skin.



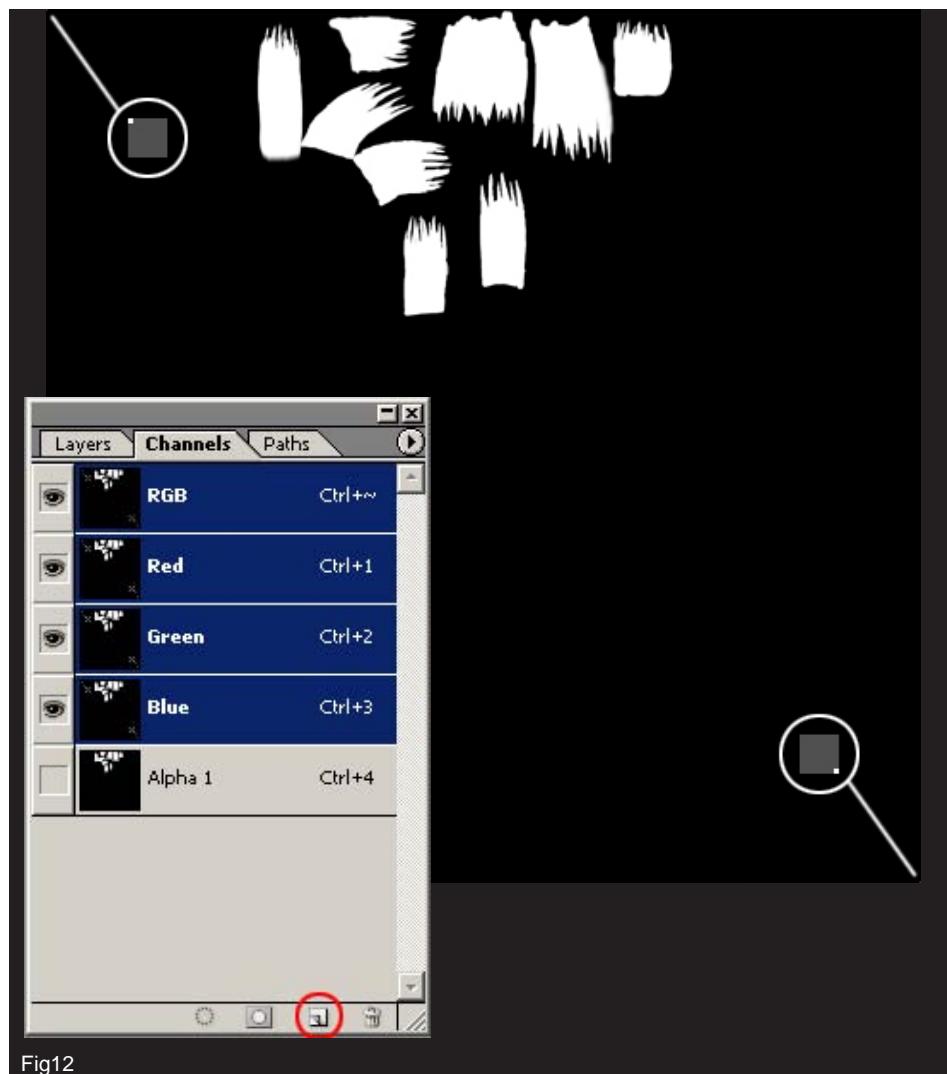
Soft Light

Fig09

10. With regards to the arm and back section of the model, I suggest you always start on the guidelines layer and draw in the shapes of the muscle groups and then save out an image to test the accuracy on your actual mesh before embarking on any significant detail and shading. This is essentially trial and error and will mean many changes and test renders before you are confident in painting in the main shadows and highlights that will define the form (Fig.10).



11. With the face and body sections well


**Fig12**

underway, it is a good time to make a start on the hair. This will utilise an alpha channel which shall be used to control the opacity within Maya, in order that we can identify hair strands. What I do here is create a new layer which I call 'Hair alpha' and I use a pure white colour and paint in the hair strands, as seen in Fig.11. We shall then copy this entire layer and paste it into a new Channels layer.

12. Select the Channels tab and click on the small icon ringed in red in Fig.12a. This will create a new channel that is called 'Alpha 1' by default. Now, before we paste our hair outline into this new channel, zoom in on two opposite corners and paint in a 1x1 pixel square, as seen in Fig.12. This will not effect the texture, as the two squares are outside the mapping coordinates, but will ensure that the hair shapes remain in exactly the same positions when they are pasted.

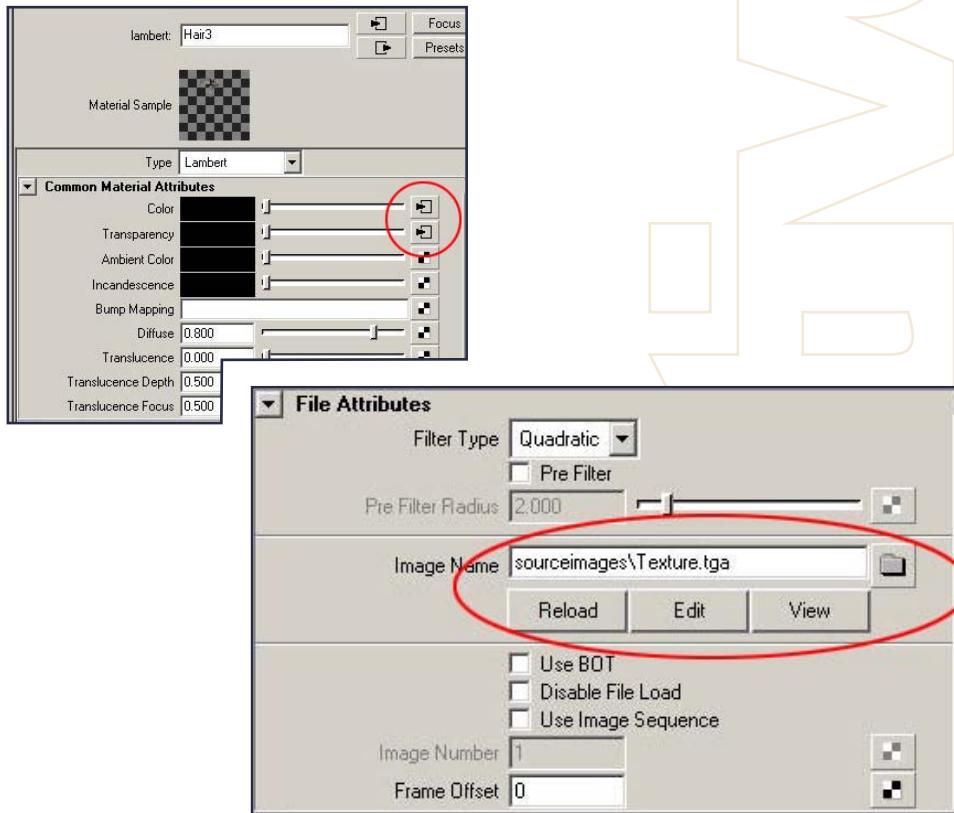
13. Copy 'hair alpha' into the Alpha 1 and then



SwordMaster



save out the image as a 32 bit tga, which will retain the alpha channel. In Maya, load the tga into the Colour slot in the Shading Group from the Multilister Window ,as shown in the upper part of Fig.13. Then assign a texture with the alpha channel - "Texture.tga" in this case. The alpha channel is automatically placed in the Transparency slot. When you look at your character in Maya, the white areas should remain visible and the surrounding black areas should become invisible.



14. In Fig.14, the white areas will be the hair which we will see but the grey boundaries of the poly's will disappear in the final render.

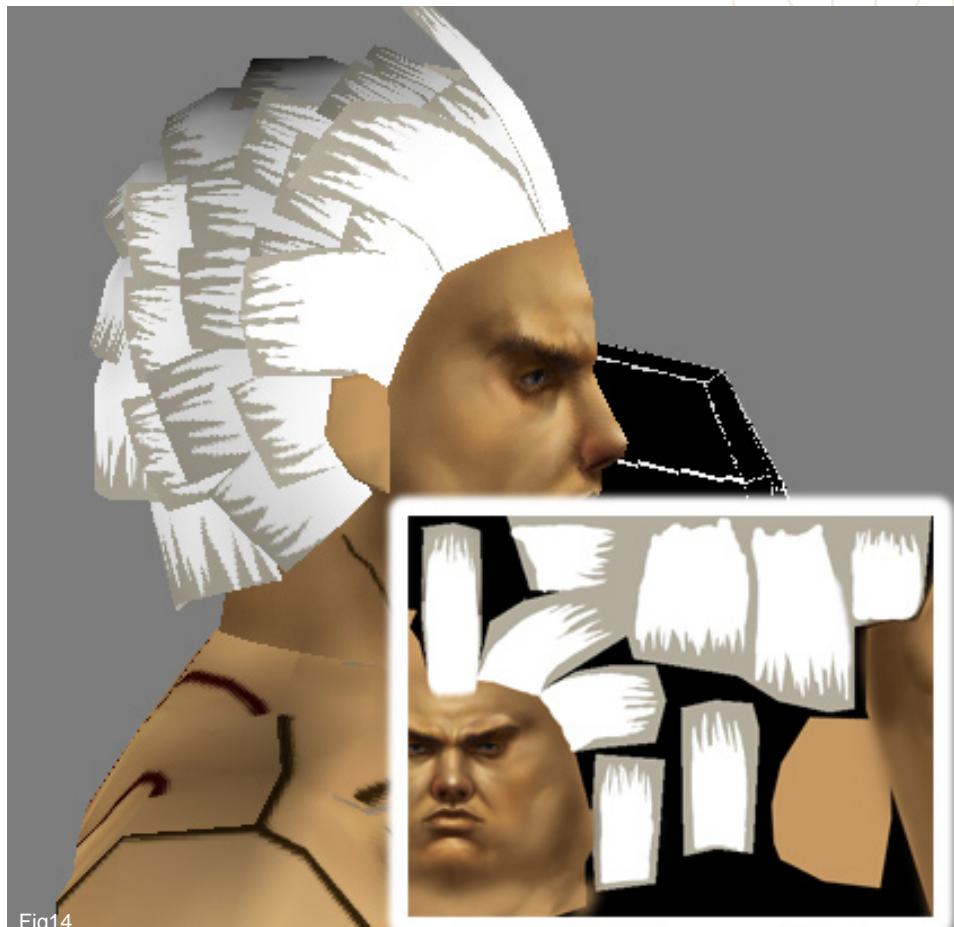


Fig14

15. Now that we have the outline of the hair, we



Fig15

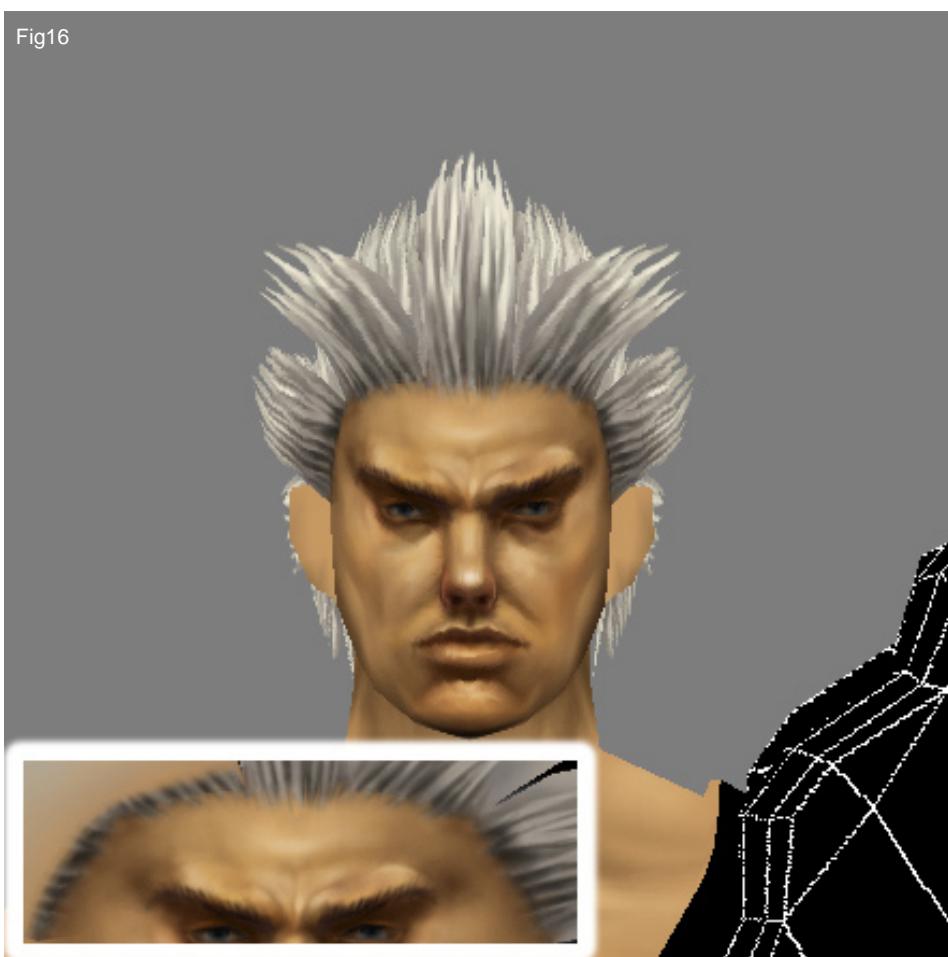


Fig16

can begin painting within the alpha areas on a new layer. Use a mid to light grey, similar to the colours seen in Fig.15, making sure to keep the roots slightly darker. To help these blend in with the scalp I have used a grey colour across the top of the head also. Do not forget to also blend the hairline in along the top of the face.

16. When all is done and applied to our model it should look something like Fig.16. There are a few areas that could be refined somewhat but you get the general idea hopefully.

17. When we apply our texture so far to the



model you may notice that there are a few areas along the seam lines that do not match up very successfully. It is a good idea to create a new guideline layer to establish which edges are adjacent on the model. Try painting different coloured lines and matching them up along certain edges as seen in Fig.17. You can see that the black and orange lines on the body are joined with the top seam of the arm in the upper right and so on. What you need to do now is make sure that the RGB values along the corresponding edges are similar and have a relative variation on each poly.

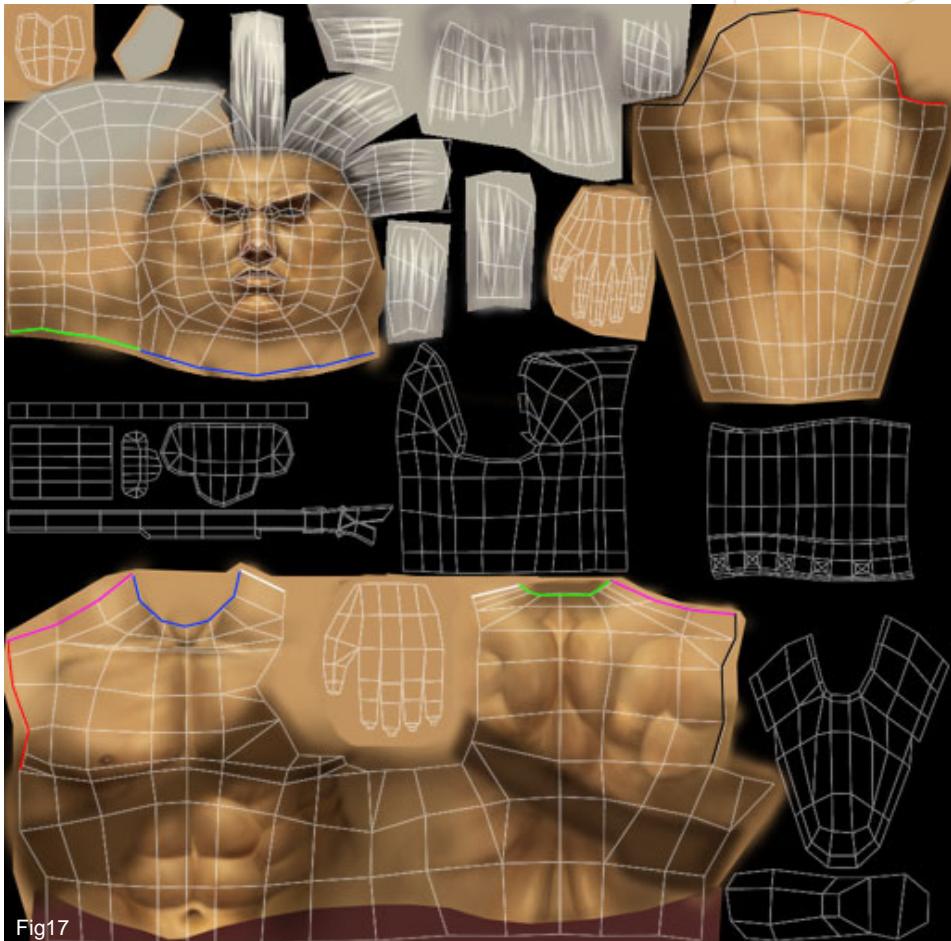


Fig17

18. In Fig.18, you can see the seam problems around the top of the arm on the left side of the image where the edges do not match. On the right side is the revised version, which shows an improvement. This just about concludes the most crucial stages of texturing the skin areas and hopefully gives you a good picture of how to go about structuring your PSD file into key components. All that is left are the ear and hand, which are predominantly done using methods already outlined. The hair could be tweaked to a degree to improve the look but you should be armed with enough knowledge to try your hand at painting a texture from scratch. Next month will see the conclusion of this Swordmaster tutorial, when we tackle the armour and clothing.

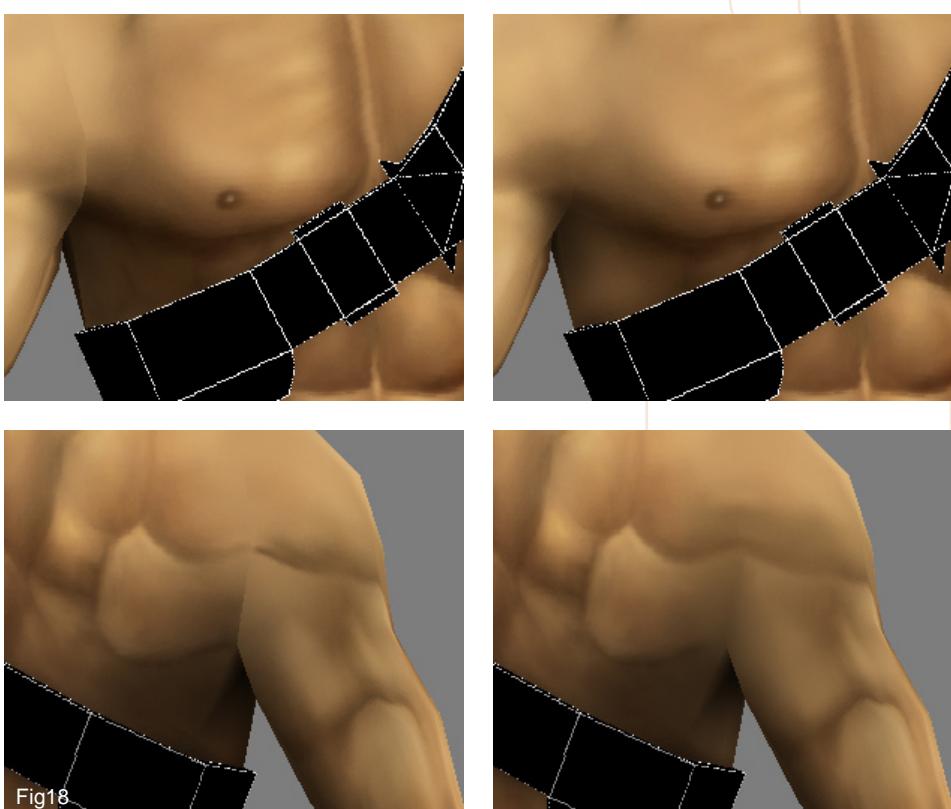
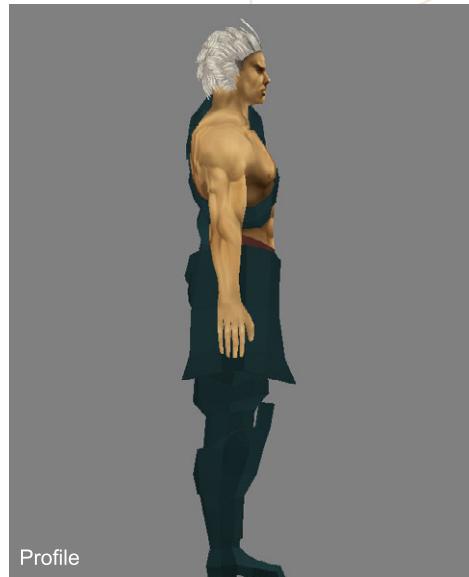


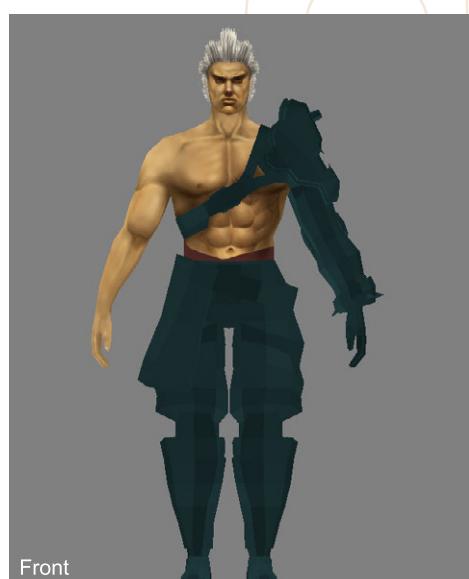
Fig18



Profile



Back



Front

Tutorial By :

**BOGDAN SUMAN**

suiobo@yahoo.com

**RICHARD TILBURY**

rich@3dtotal.com

The 'Swordmaster'

character was originally created  
by

**SEONG-WHA JEONG**

www.xcloud.net

sephiloss@naver.com



## THE SWORDMASTER

SOFTIMAGE® XSI

Is our new precise, step by step tutorial for a highly polished, low polygon game character with detailed texturing for real-time rendering.

We have had the tutorial created for the 5 major 3d applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3d applications. Over the next 8 months we will outline in detail the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

MODELING THE HEAD

Issue 010 June 06

MODELING THE TORSO

Issue 011 July 06

MODELING THE ARMS & LEGS

Issue 012 August 06

MODELING THE CLOTHING & HAIR

Issue 013 September 06

MODELING THE ARMOUR

Issue 014 October 06

MAPPING & UNWRAPPING

Issue 015 November 06

TEXTURING THE SKIN & BODY

Issue 016 December 06

TEXTURING THE ARMOUR &  
CLOTHING

ENJOY ...



## PART 7

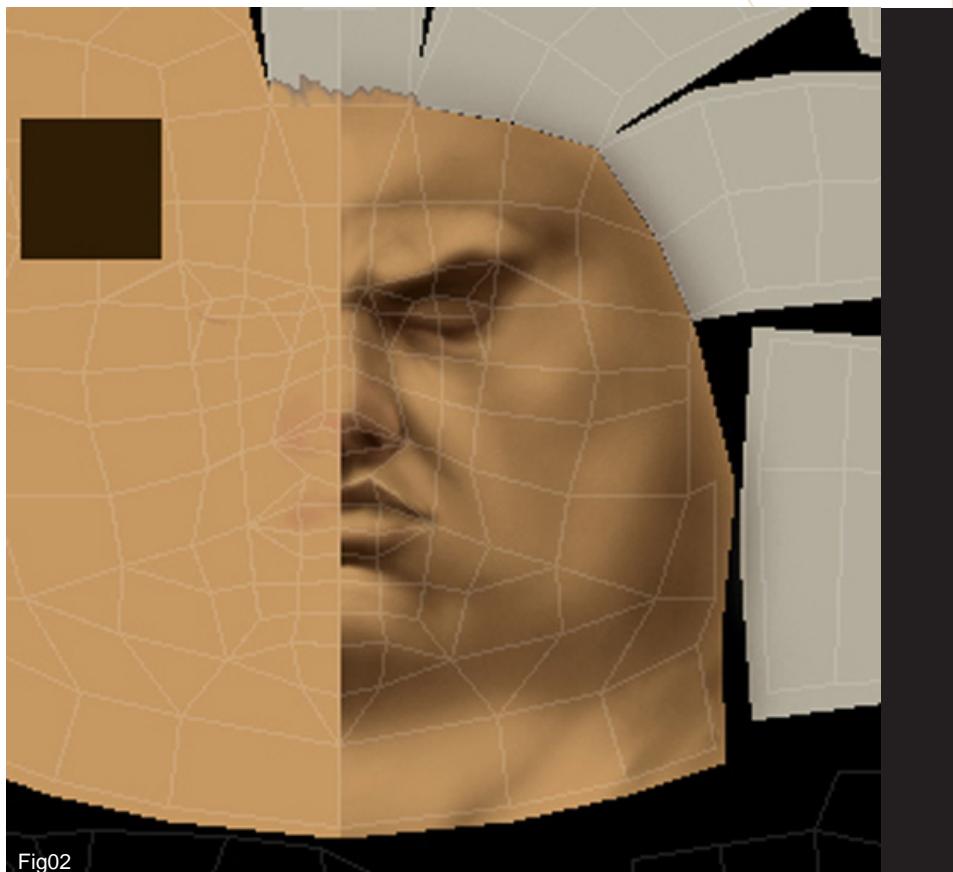
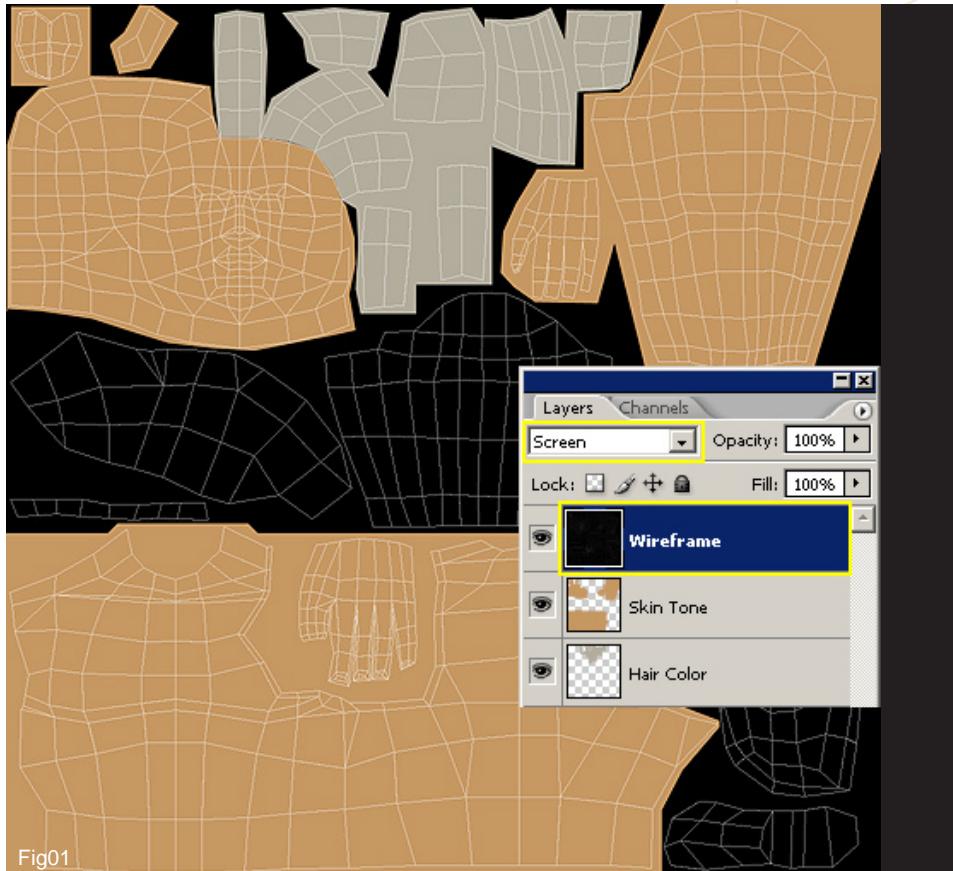
# TEXTURING SKIN & HAIR

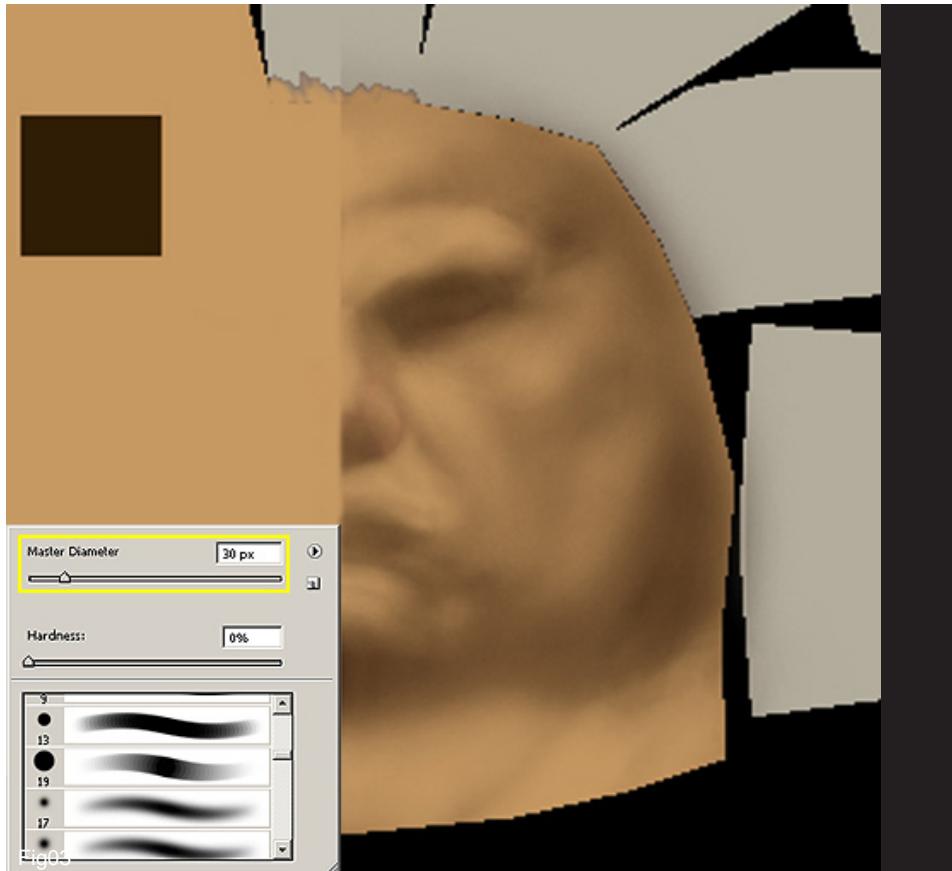
### INTRODUCTION

Here we are at one of the most important parts of the work: Texturing. It is also one of the most difficult, since you have to use all of your artistic skills to create a nice texture for your character. Due to the “artistic” nature of this task, we cannot cover up every single step, it would take ages to describe every single stroke done in the 2D painting program. We will try to point out only the significant steps to create a texture for the Sword Master low-poly character. So, this part of the tutorial will consist of showing you how to organise best the Layers in Photoshop; in this way every little change to the texture could be done easily and quickly.

1. Let's start blocking out the various parts of the texture. We need two colours, one for the skin and one for the hair. The rest (armour components and boots) will be ignored for now. The colour for the skin is 198 152 98 (RGB values). Create a new layer, select the parts of the texture dedicated to the skin (body, arm and head) and fill in the selections with the colour we have chosen for the skin tone, as shown in Fig01. As you can see, the layer with the wireframe image was put above the other, with a Screen blend mode. In this way we can always see the wireframe on the texture. The Screen mode was used since the colour of the wireframe is a bright one (light grey); if you are using a black (or dark) wireframe, put it in Multiply mode. Create another layer for the hair colour, and fill the selections with a 179 173 157 RGB grey colour.

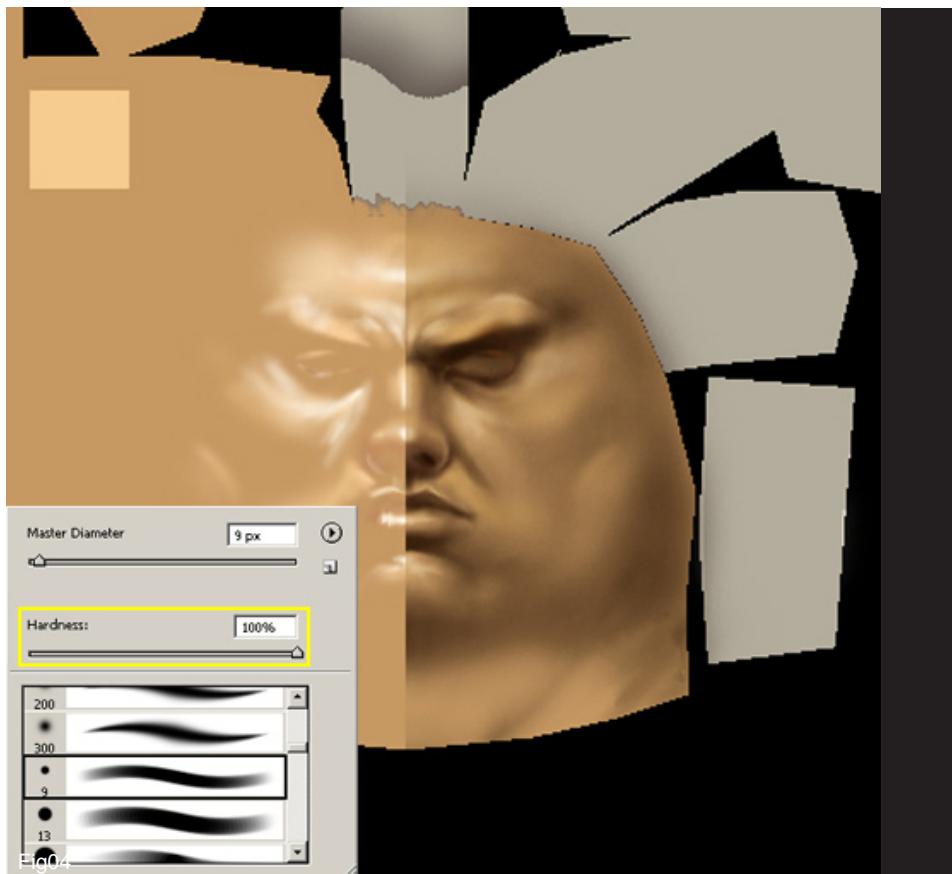
2. Now, create another layer, which will be used as a shadow layer for the skin, to define the muscles and all of the shading. Set this layer to





Multiply as a blending mode. All of the strokes will be made using various shades of the same colour (RGB 47 29 5), which you can see in the top left corner of Fig02, inside the little box.

3. We can create just half of the face, and then copy and flip the other half. Activate the Brush tool in Photoshop, right-click with the mouse and choose a brush with a diameter of about 30px. Start defining the area of shadow over the face.



4. While you are painting, you can change the opacity and the flow of the brush (you can find these two options in the top toolbar). Once you are satisfied with the general shadows, you can add some smaller details using a smaller brush with a high Hardness value. Try to obtain something similar to Fig02. Always use only one colour for the shading, and keep it on a separate layer, so you can change it any time. Let's add another layer, this time we will use it to create the highlights. Use a pale yellow, as shown in the small box in Fig04. You can also add extra details using a brighter colour (like white) to the brightest parts. You can see the original Highlights layer (in Normal blending mode and with no Shadows) on the left part of the face in Fig04, and the final result with base Colour + Shadows + Highlights on the right part.



5. Let's move on with the texturing of the body. Use the same technique as before: define the shadows first, and then create the highlights. Don't forget to keep everything on the right layer. Another useful thing you could do is to depict some of the most important features on the texture, and apply it to the model. In this way, you can see better where to paint and what to paint. For example, in Fig05, the white strokes were used to depict the area covered by the armour strap, while grey strokes and darker ones were used to shape out the main anatomical features, like the muscles in the abdominal area.

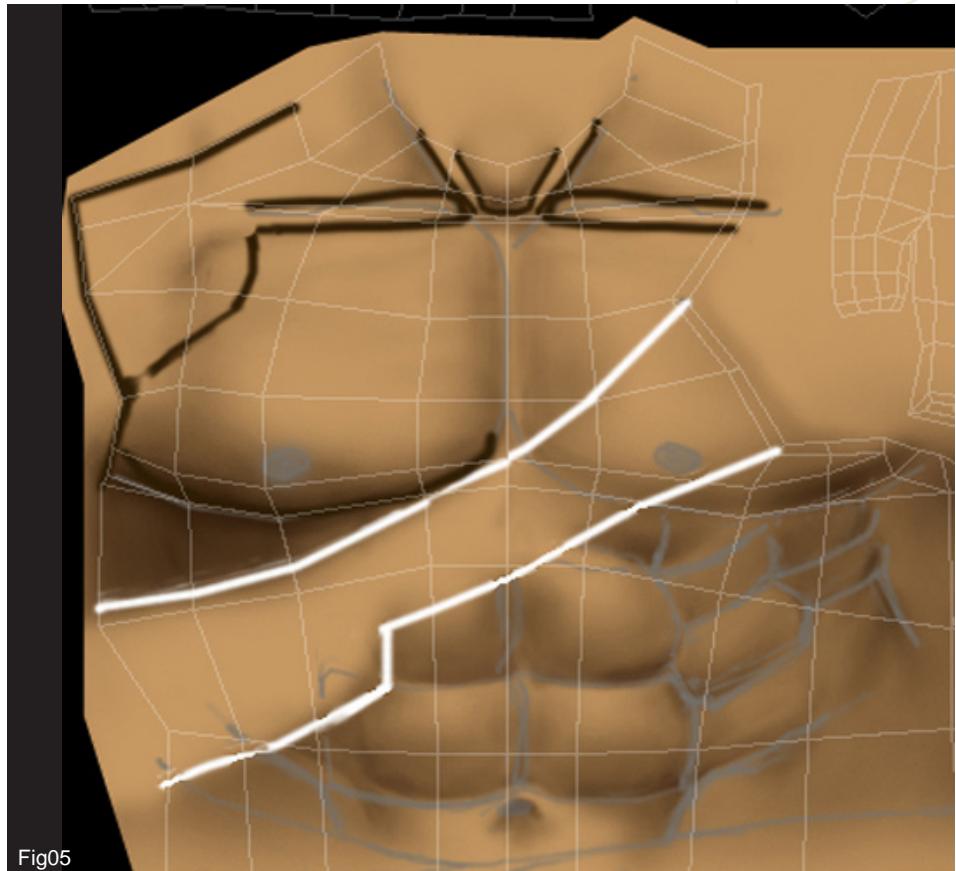


Fig05

6. Take a look at the Front view in XSI to get the armour strap in the right place, and use the wireframe as a reference.

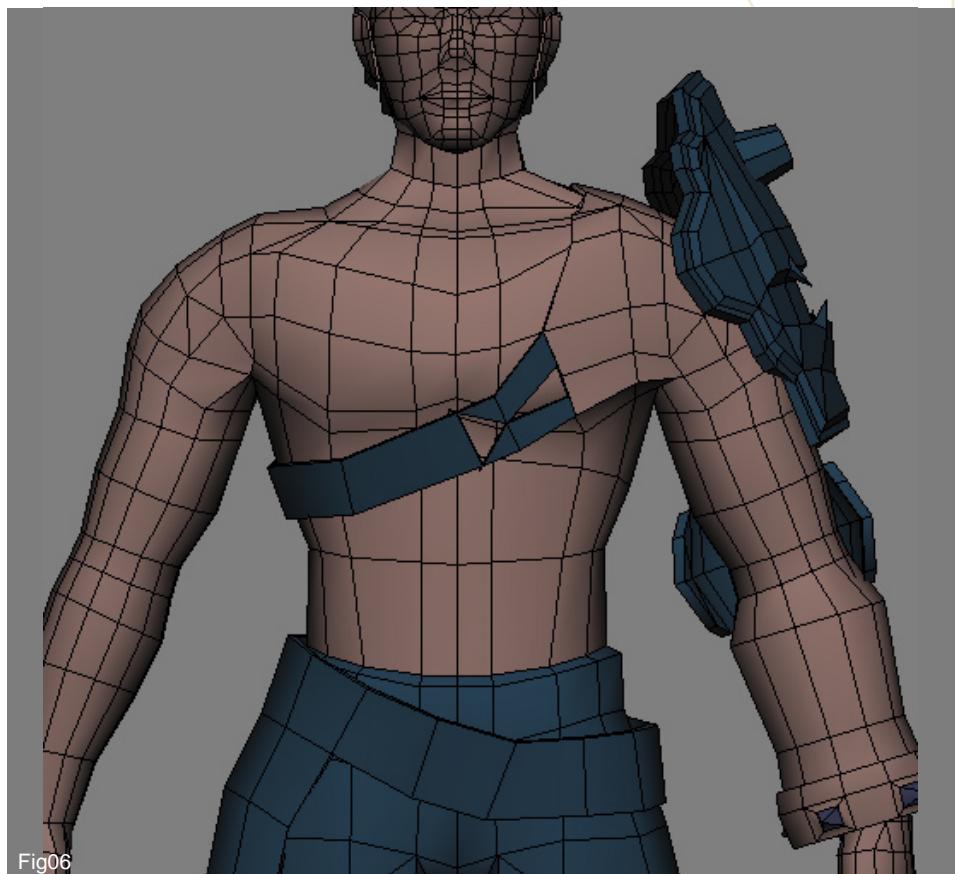


Fig06

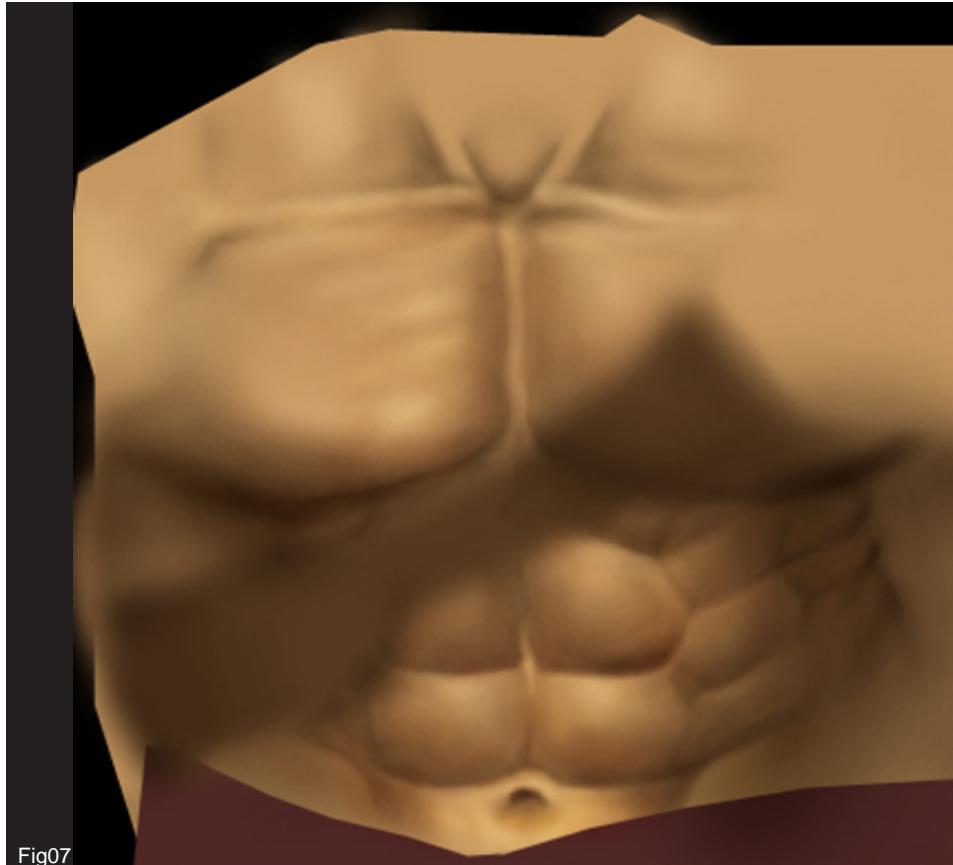


Fig07

7. Once you have finished shading the torso, create another layer and paint the shading for the area that follows the armour strap. Don't forget that you need to do this for the back too. Use the same colour that you used for the shadows until now, and set this new layer to Multiply blending mode.

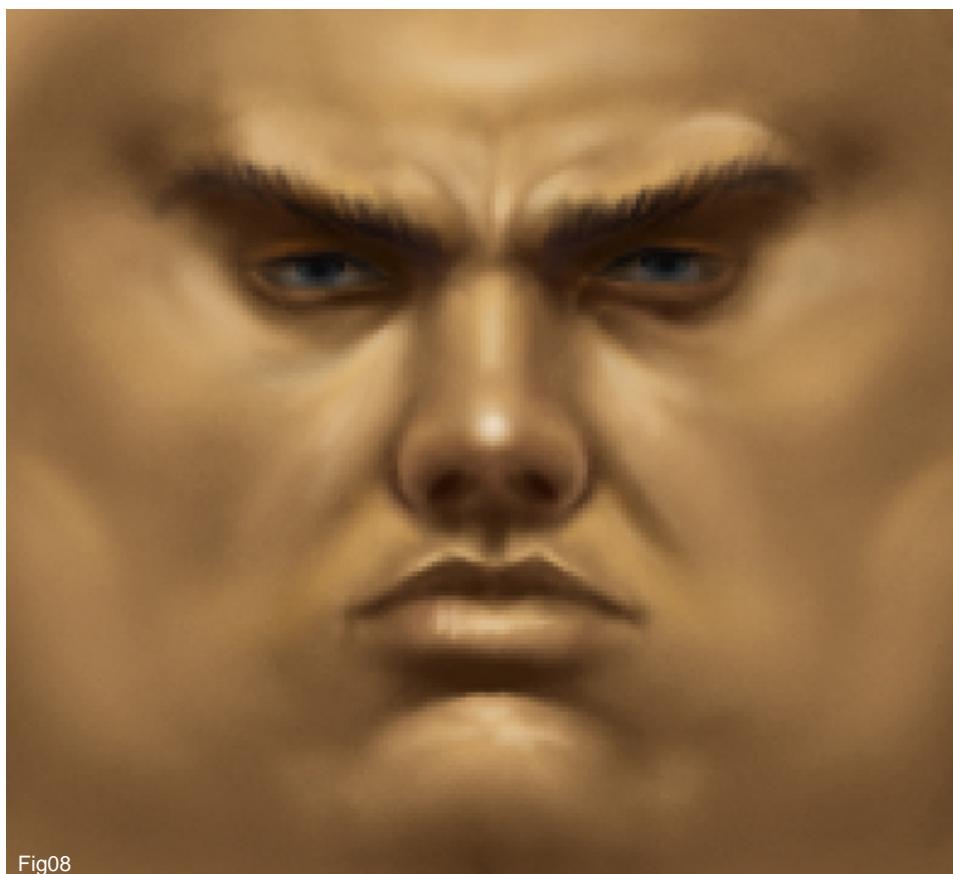


Fig08

8. The texture is missing some crucial details. For example, we still need to add details such as eyes, eyebrows and nipples. Let's take care of the face for now. Use a small-sized brush and add the needed details for the eyes and eyebrows. Also, you can add some more highlights on the nose and on the upper part of the lips, to give them more shading and shape. Once again, there is no "special trick" to create a nice texture; just use your artistic skills at your best.



9. Create another layer, and use Soft Light blending mode for it. This will be used to create subtle variations on the skin tone. Use a colour similar to the one in the small box in Fig09 (RGB 117 72 69) and add some areas of variation on the body and face. Avoid doing this in the seam zones, and do not exaggerate this effect. Just use it to create small spots and patches over the nose, eyes, chin and torso.

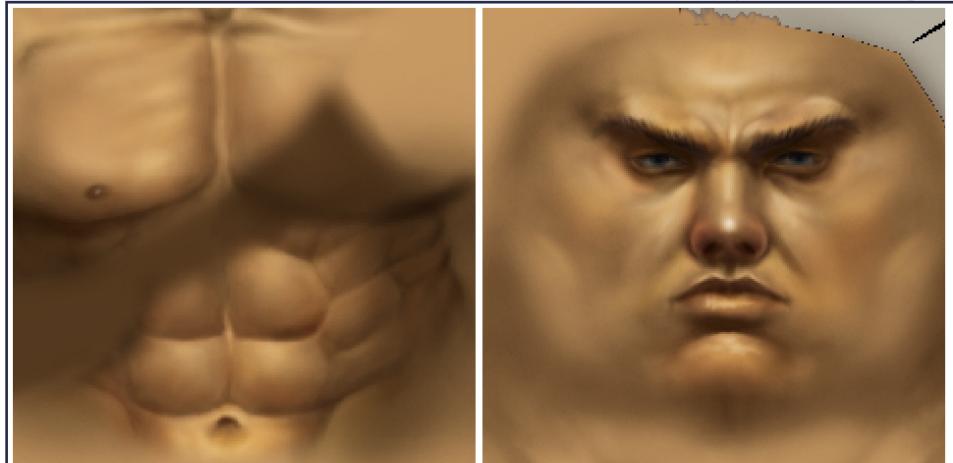


Fig09

10. Always start with some guidelines, test them on the model and, only when you are satisfied, continue shading and painting the real texture. You will need to change and fix the texture many times before achieving the final result you are looking for, so be patient and take one step at a time.



Fig10

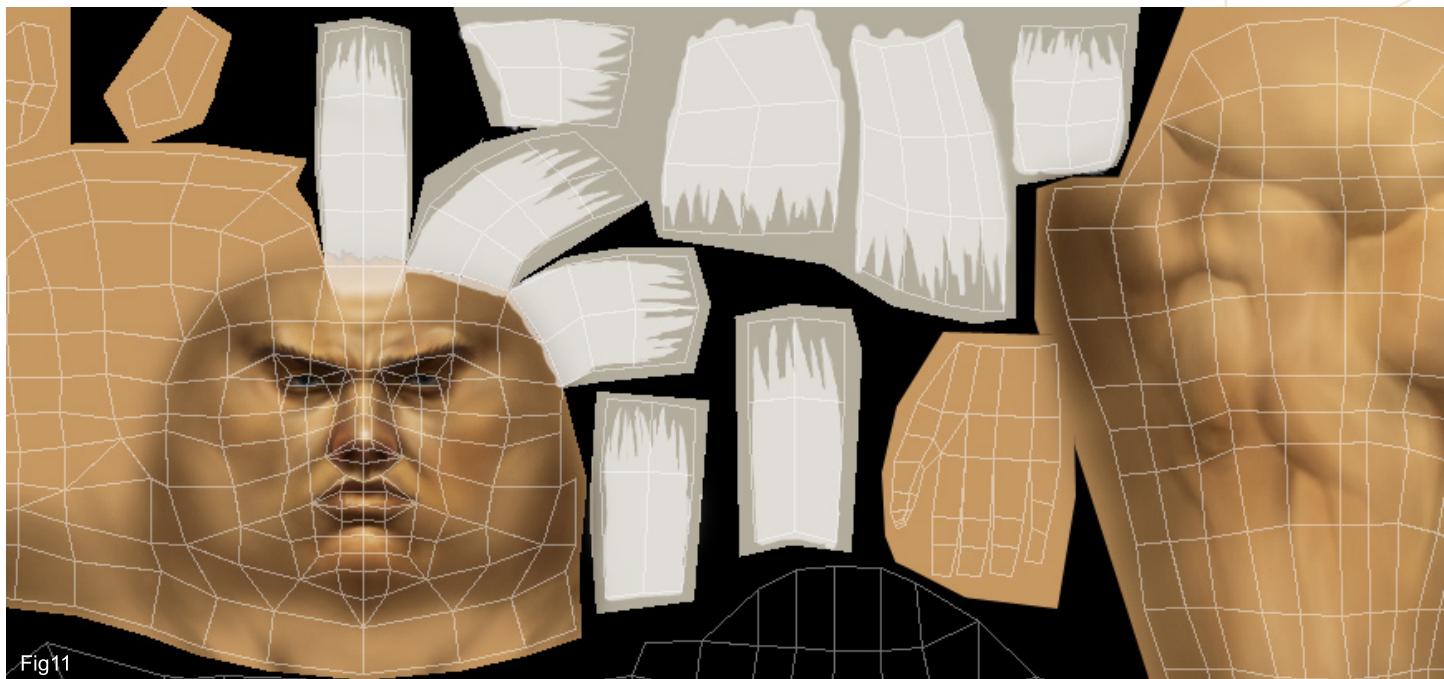
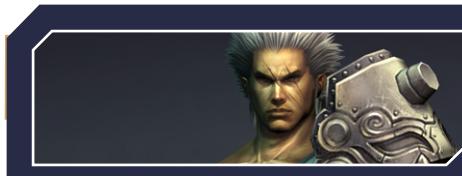


Fig11

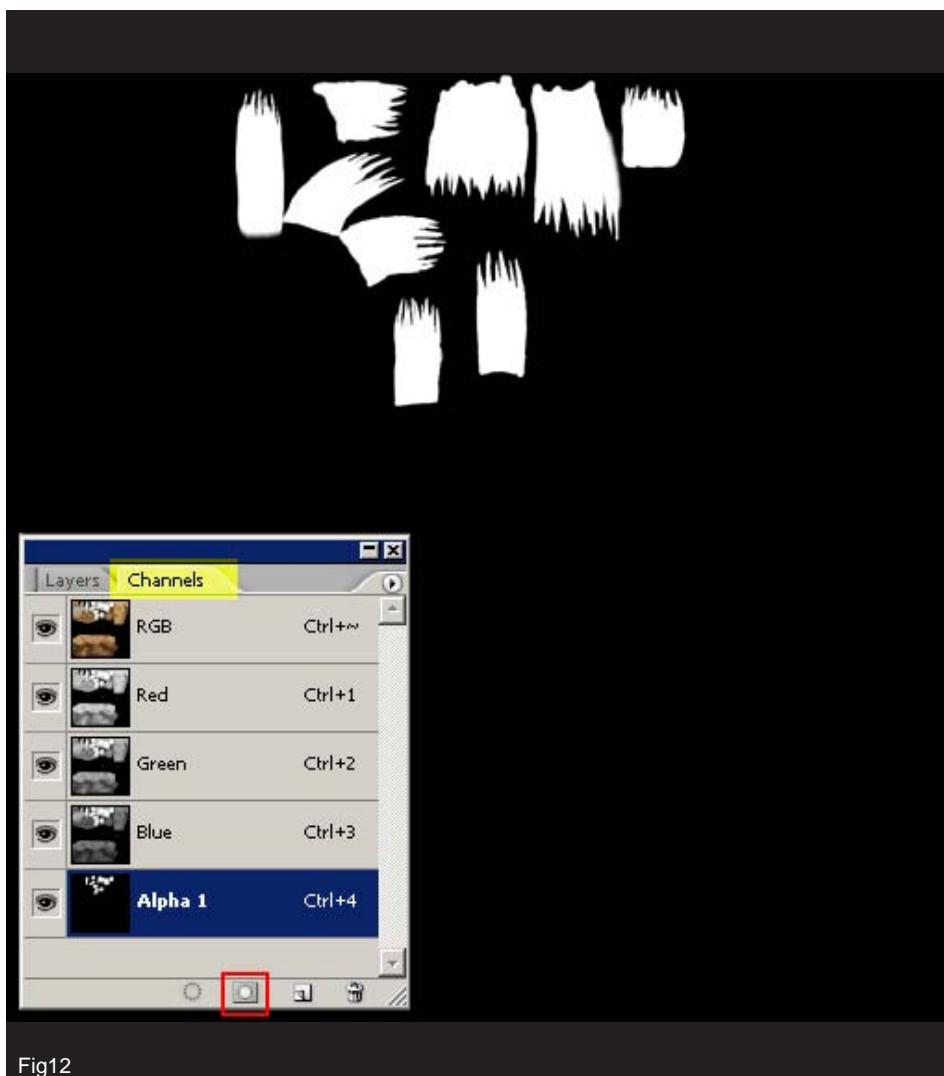


Fig12

11. Let's start creating the hair texture. It will use an alpha opacity map that will allow us to decide where to show the hair and where to make the texture transparent. Create a new layer, call it "Alpha" and paint the hair strands on it, with a pure white colour. Use the wireframe as a guideline, as shown in Fig11. Once you are done painting the strands, Ctrl + click on the layer's thumbnail - this will create a selection of the strands, which we will paste into the alpha channel in the next step.

12. Switch to the Channels tab in Photoshop and click on the icon marked in red in Fig12. This will create a new channel from the current selection, called "Alpha 1" by default. This will be the layer that will guide transparency in the 3D application (in this case, XSI).



13. Now that we have a texture with an alpha channel, we need to save it in a file format that supports 32 bit. A TGA file would just be fine. Save the texture as a .TGA file with 32 bit depth. In order to see the texture with the alpha channel in the XSI viewports, we need to use the RealTime visualization. You can choose OpenGL or DirectX; they could both work, but mostly it depends on the graphics card that you are using. In this case, we'll use an OpenGL visualization, but you could just go for DirectX in case it should not work. Open the Render Tree and create a new OGLAlphaTrans shader (Nodes -> RealTime OpenGL -> More... -> and from the browser choose OGLAlphaTrans file). This will create a Tree, like the one in Fig13a. Just plug the SwordMaster texture into the Tree and plug the output of OGLAlphaTrans in the Material node (RealTime). Double-click on the Material node in the RenderTree and enable Track Shader from the drop-down menu. Also, switch the visualization of the viewport to RealTime OpenGL.

14. The white areas in Fig14 will show the hair in the final render, whilst the grey parts will be completely transparent.

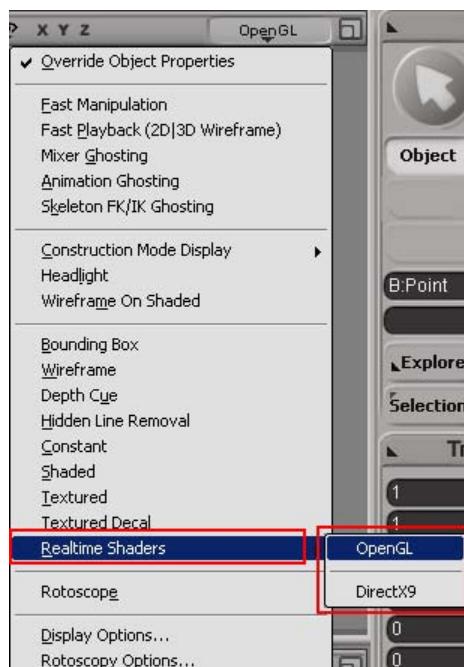
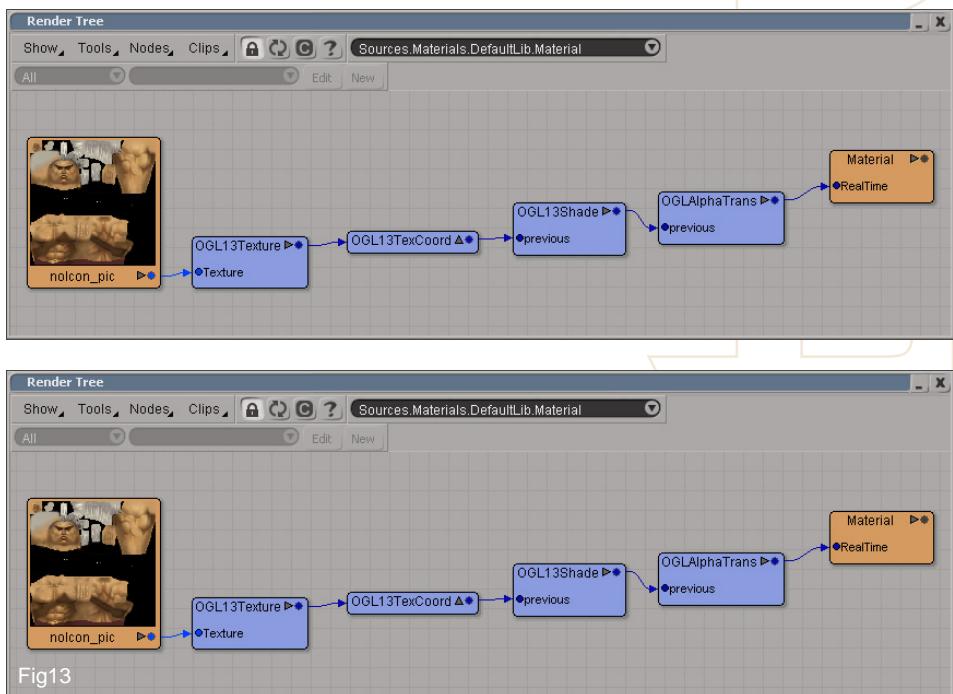




Fig15

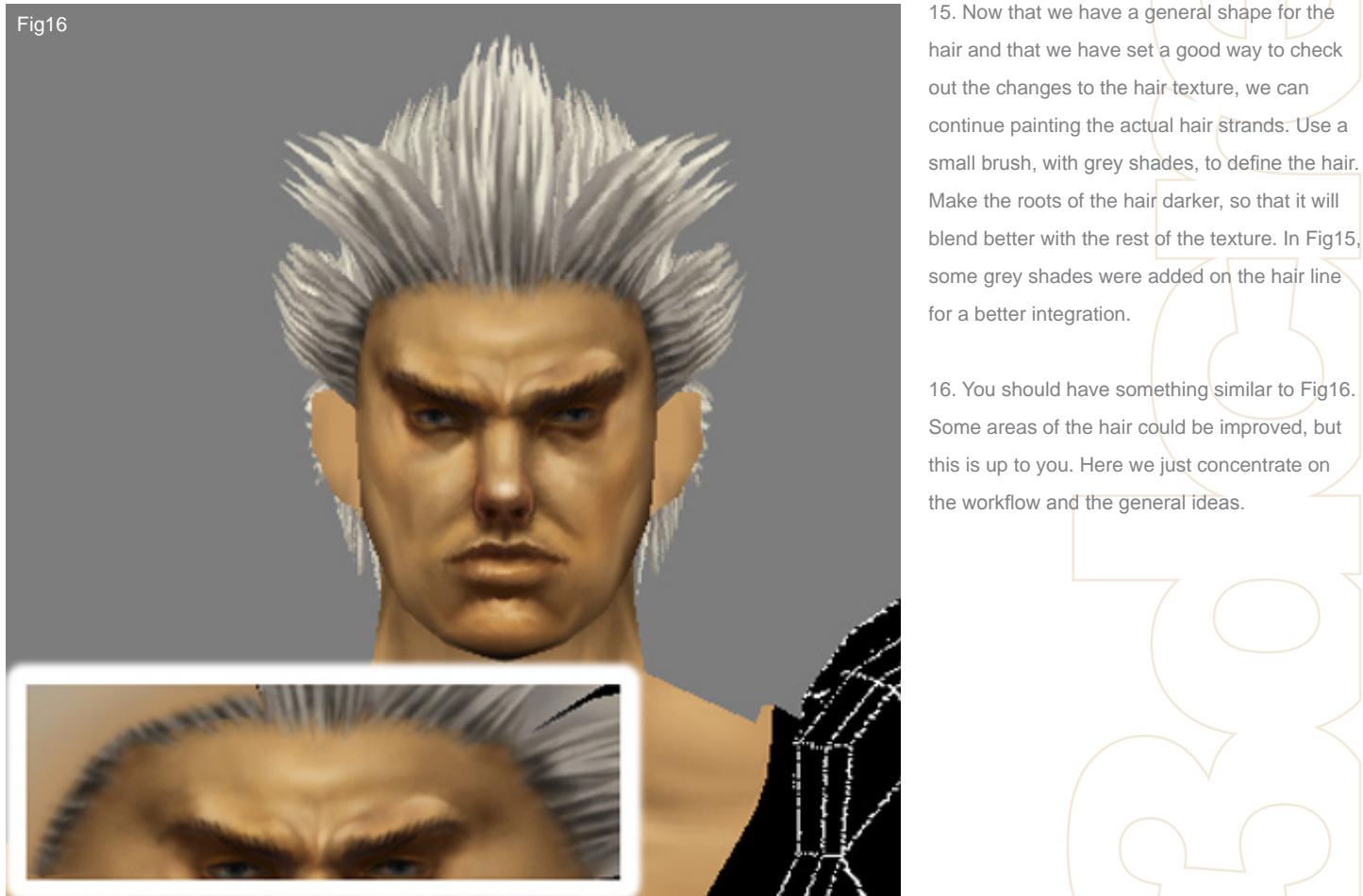


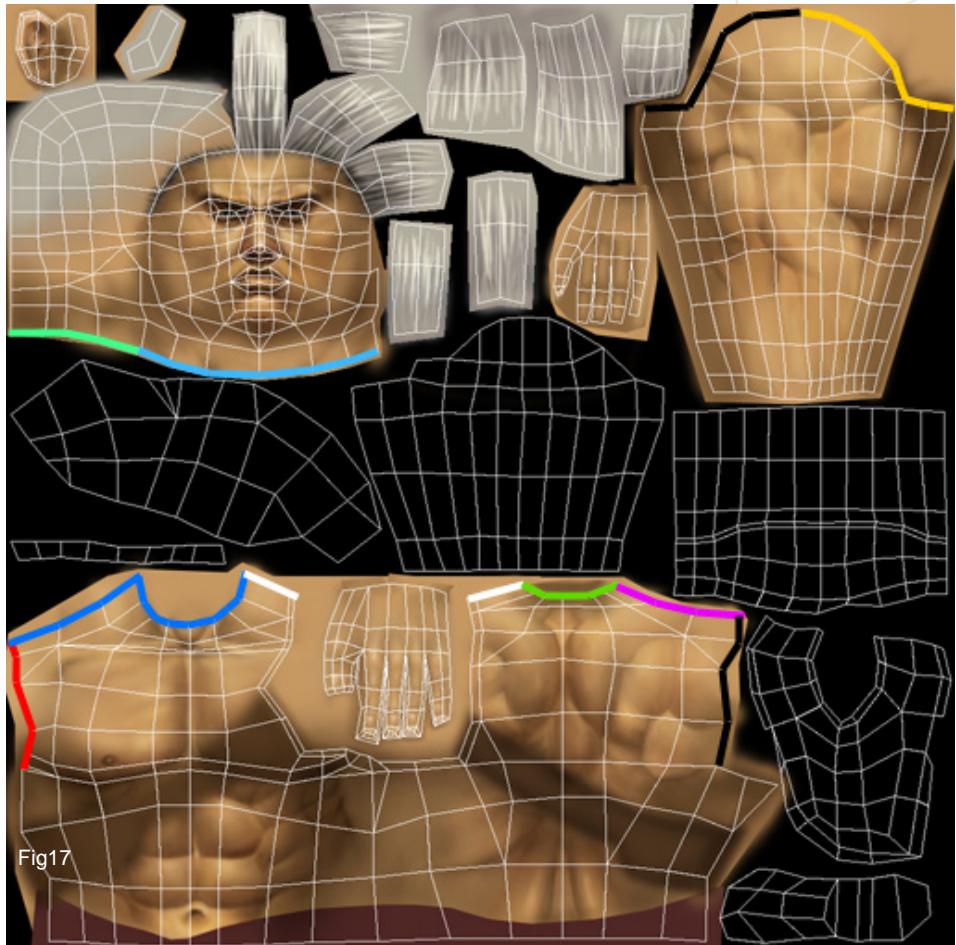
Fig16

15. Now that we have a general shape for the hair and that we have set a good way to check out the changes to the hair texture, we can continue painting the actual hair strands. Use a small brush, with grey shades, to define the hair. Make the roots of the hair darker, so that it will blend better with the rest of the texture. In Fig15, some grey shades were added on the hair line for a better integration.

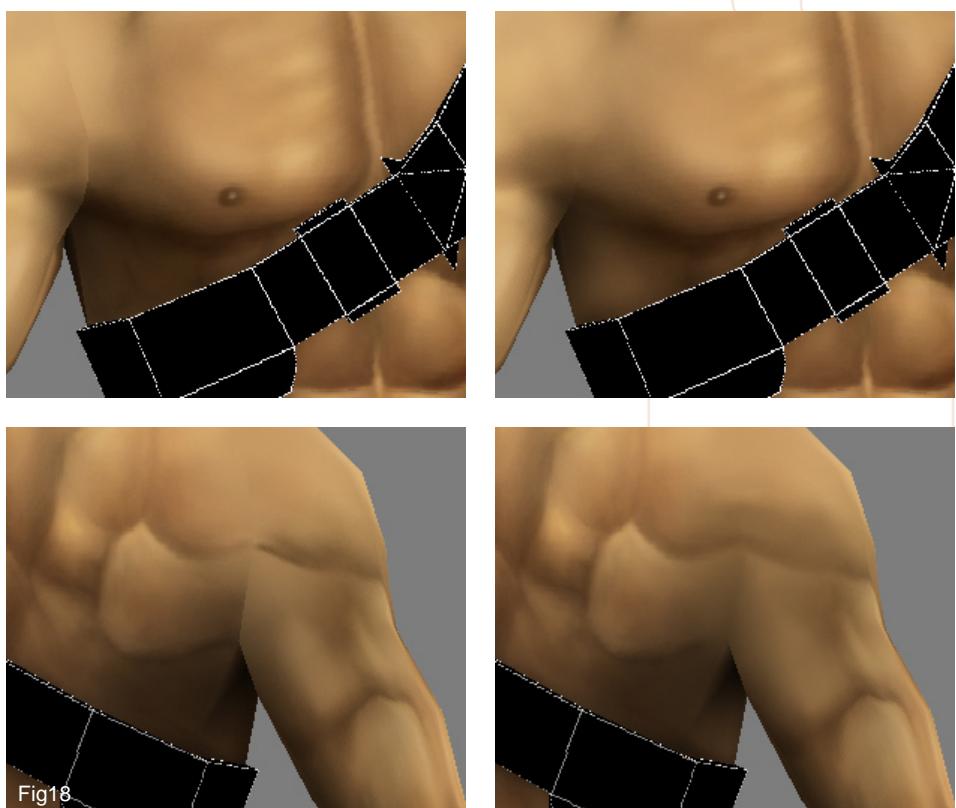
16. You should have something similar to Fig16. Some areas of the hair could be improved, but this is up to you. Here we just concentrate on the workflow and the general ideas.



17. If we take a look at the texture on the mesh in XSI, you may find out that there are some seams which are not matching up correctly. To fix this, it is useful to create a new guideline (on a new layer) using different colours, as shown in Fig17. In this way, you will have a visual aid to track and fix the areas with problems. All you need to do is to make sure that these seams use the same RGB value for the texture along the edges of the seam.

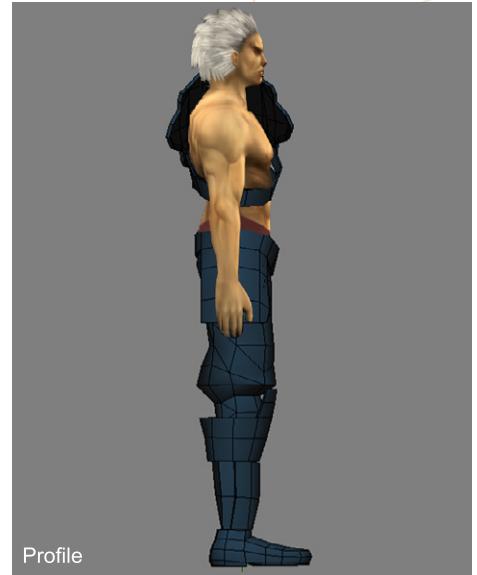


18. In Fig18, you can see the original picture with the seam problem, and on the right you will see an improvement. This just about concludes the most crucial stages of texturing the skin areas and hopefully gives you a good picture of how to go about structuring your PSD file into key components. All that is left are the ear and hand, which are predominantly done using methods already outlined. The hair could be tweaked to a degree to improve the look but you should be armed with enough knowledge to try your hand at painting a texture from scratch. Next month will see the conclusion of this Swordmaster tutorial, when we tackle the armour and clothing.





SwordMaster SOFTIMAGE® XSI



Tutorial By :

**LUCIANO IURINO**

iuri@pmstudios.it

**RICHARD**

**tilbury**

rich@3dtotal.com

The 'Swordmaster'  
character was originally  
created by

**SEONG-WHA JEONG**

www.xcloud.net

sephiloss@naver.com